

# The Candy Manufacturer

A Technical and Commercial Magazine for Manufacturing Confectioners Exclusively  
Published by THE CANDY MANUFACTURER PUBLISHING CO., Stock Exchange Bldg., Chicago

Vol. II

OCTOBER, 1922

No. 9



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Pass The Candy Manufacturer around

After reading forward to:

Superintendent

Chemist

Purchasing Dept.

Sales Manager

Return to

Read wherever good candy is MADE



# DELFT

## The World's Best Food Gelatine

---

HAROLD A. SINCLAIR, 160 Broadway, NEW YORK

---

*"Price is a relative term—Quality always a concrete fact"*

### DISTRIBUTORS:

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NOYES BROS. & CUTLER  
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570 Folsom St., San Francisco, Cal.

CALIFORNIA FOOD PRODUCTS  
COMPANY  
949 E. Second St., Los Angeles, Cal.

W. P. DOWNEY  
88 Grey Nun St., Montreal, Can.

STOCKS  
EVERYWHERE

### Ask Any Food Control Official About Delft

Delft standards of purity, uniformity and strength are recognized and praised by food control officials.

Before Delft entered the field, who ever heard of gelatine supplied in quantity lots, free from liquefying and harmful bacteria when delivered? Gelatine that is free from liquefying and harmful bacteria is a highly sanitary product.

Get your friendly competitor to tell you about the splendid results obtained from Delft.

Delft is strictly a TOP QUALITY gelatine, sold at reasonable figures that represent exceptional value. Because of its purity and strength, it goes further than cheap gelatines, and actually costs you less.

You can get the same price from our distributors as from us.







Members: National Confectioners' Association, Midland Club, Chicago Association of Commerce.  
Applicant for Membership in Audit Bureau of Circulation.

# The Candy Manufacturer

Registered, U. S. Patent Office

"READ WHEREVER GOOD CANDY IS MADE"

*A Specialized Technical and Commercial Magazine for Confectionery  
Superintendents, Purchasing Agents and Executives*

Contents Copyrighted 1922, Earl R. Allured

PUBLISHED MONTHLY BY

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Chicago Association Confectionery  
Superintendents

Vol. II

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## PURPOSE

The purpose of THE CANDY MANUFACTURER is to provide a medium of constructive service and communication between manufacturing confectioners exclusively, a high-class specialized business magazine devoted to the problems and interests incident to the manufacture of confections and the management of a candy factory.

## POLICY

THE CANDY MANUFACTURER, being a highly specialized publication, is edited in the interest of the executive, the purchasing agent, the chemist and the superintendent exclusively, and provides a medium for the free and frank discussion of manufacturing policies and problems, methods and materials.

The same corresponding policy applies to the advertising pages which are available only for a message directed to manufacturing confectioners and relative to a reputable product or service applicable to a candy factory.

## The Candy Manufacturer believes in

**A Technical Candy School** with resident and extension courses for factory superintendents and journeymen candy makers.

**Pure Food Legislation** which enforces a quality standard for confectionery.

**Rigid Inspection** of candy factories to enforce sanitation and working conditions necessary for the production of a pure food product.

**Maximum Production** from each production unit of a candy factory and a clearing house of production records.

**Uniform Method** of cost finding and accounting.

**An Annual Exposition of Confectioners' Supplies** and equipment under direction of (not merely endorsed by) The National Confectioners' Association.

**DO NOT CONFUSE** The Candy Manufacturer with other publications with similar names published in Chicago. Be sure of our street address, please: 30 North La Salle Street, Stock Exchange Bldg.

We Take Pleasure in Announcing

The Third

# National Confectionery and Associated Industries Exposition

—AT—

Young's Million Dollar Pier,  
Atlantic City, N. J.

May 21 to 26, 1923

---

The Annual Convention of the National Confectioners'  
Association will take place May 23, 24, 25

---

Prospectus and detailed information  
has been mailed to all interested

---

If you are going to exhibit GET YOUR SPACE EARLY

---

EXPOSITIONS COMPANY OF AMERICA

Suite M72, Congress Hotel, CHICAGO, ILL.

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## The Candy Manufacturer's Approved Advertising of Confectioners' Machinery and Supplies and Miscellaneous Advertising Directed to Manufacturing Confectioners'

**POLICY:** THE CANDY MANUFACTURER is essentially a manufacturers' publication and therefore is a logical advertising medium only for confectioners' supplies and equipment. The advertising pages of THE CANDY MANUFACTURER are open only for messages regarding reputable products or propositions of which the manufacturers of confectionery and chocolate are logical buyers.

This policy **EXCLUDES** advertising directed to the distributors of confectionery, the soda fountain and ice cream trade. The advertisements in THE CANDY MANUFACTURER are presented herewith with our recommendation. The machinery equipment and supplies advertised in this magazine, to the best of our knowledge, possess merit worthy of your careful consideration.

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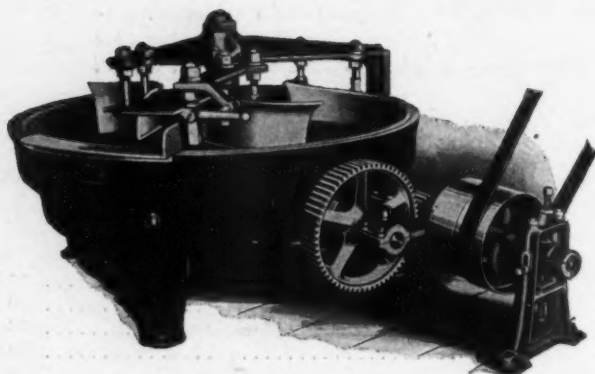
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# **"You can't beat 'em"**

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## **The Ball and Dayton Cream Beaters and Coolers**



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### **The Dayton Beater and Cooler**

References, detailed description and prices  
on request.

Fully protected by patents.

Beware of imitators and infringements.

---

President Harris says: *"We cannot avoid competition, as it is inevitable at all times, but we can prepare ourselves to meet it, and the equipment for such preparation will not be the apparently easier method of cutting prices, but by attaining more efficiency in each department."*

The Ball and Dayton Beaters are proven time-and-money-savers while producing just the kind of work which the finest quality goods demand.

**The Answer: Lower costs and more profits.**

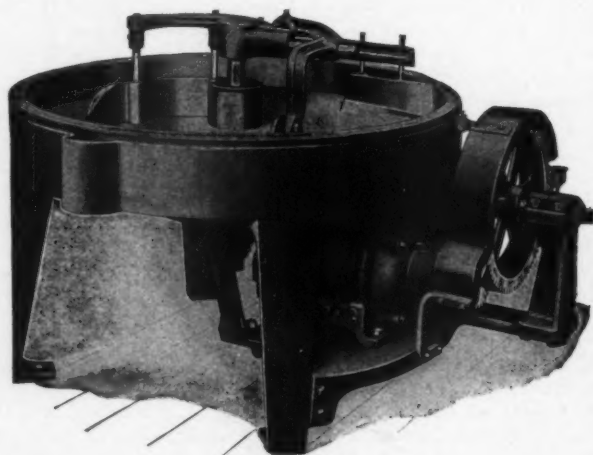
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### **The Ball Beater and Cooler**

The above illustration shows motor attached to machine with gear drive. This can be applied to either our 3, 4 or 5 foot Ball machines, also our 5 foot Dayton machines. Price upon application.

Notice the rigid and substantial construction of the motor attachment.

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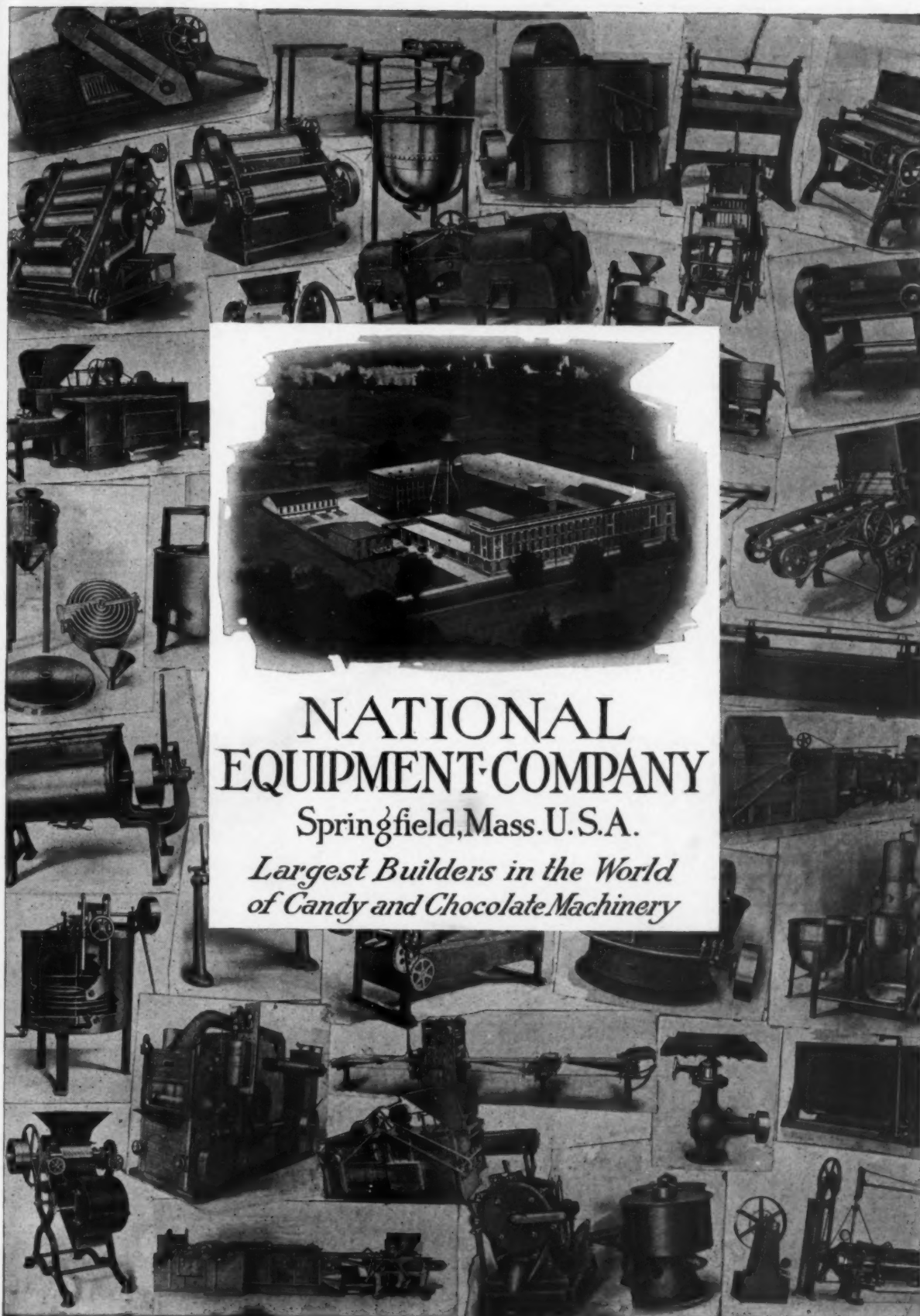
Send for descriptive literature on entire line giving sizes; capacities, horse-power required, speed, weights, details of construction and net prices.

---

**THE BALL CREAM BEATER CO.**  
DAYTON, OHIO

---





# NATIONAL EQUIPMENT COMPANY

Springfield, Mass. U.S.A.

*Largest Builders in the World  
of Candy and Chocolate Machinery*

# THOS. MILLS & BRO., Inc.

Established 1864

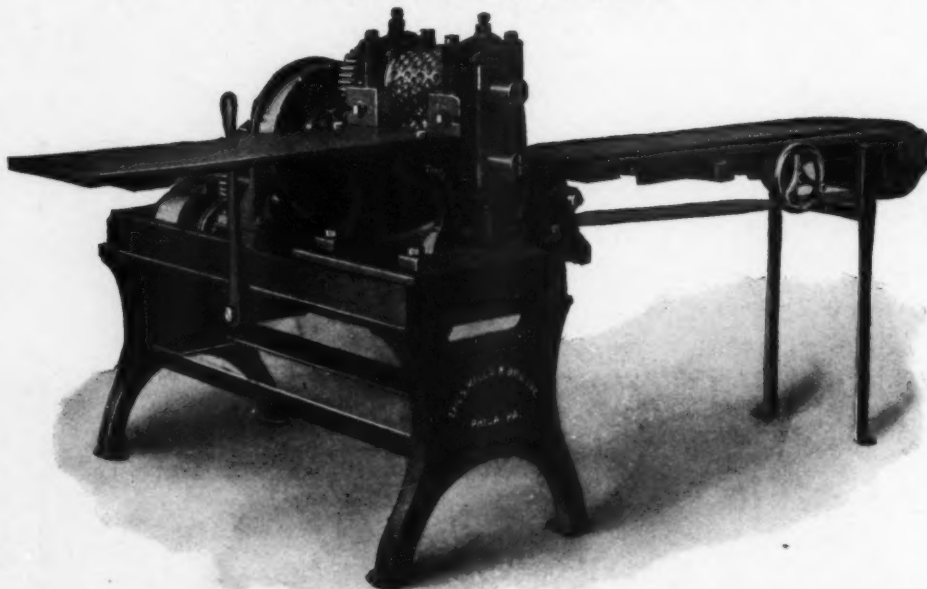
## CONFECTIONERS' TOOLS AND MACHINERY

1301 to 1315 North Eighth St.

PHILADELPHIA, PA.  
STATION O



Automatic Caramel Cutting Machine—Cuts Both Ways in One Travel of the Bed, Used in Leading Factories for Caramels, Coconut Blocks, Etc., Send for Circular.



Large Power Drop Frame with Stand and Endless Belt Conveyor; Our Latest Type for Large Output and Heavy Duty.

Our Catalog "O" Should Be in the Hands of Every Factory Superintendent; Sent on Application. Please Mention "The Candy Manufacturer" It Helps.



# How the Candy Manufacturer turned a Million Dollar Loss into a Million Dollar Profit

*By reproducing the Ideal Day 365 days in the year*



OUR ENGINEERS were called into consultation with one of the largest manufacturers of hard candies in this country. He had orders that had to be delivered and the hot, sultry summer weather made it impossible for him to operate.

It cost him just \$15,000 for every day his plants were shut down, and he wanted to turn that loss into a profit. He wanted to operate his plant 365 days in the year.

Our engineers went over his New York plant. They recommended the proper equipment, and they **GUARANTEED** the results.

Were the results satisfactory?

The answer is found in the fact that he had us equip his western plant a few months later.

What we have done for this candy manufacturer, we have done for many others, and we can do the same for you.

Pick out the ideal day for operating your factory and we will **GUARANTEE** to reproduce it 365 days in the year.

It will pay to investigate.

**B. F. STURTEVANT CO.**

Hyde Park, . . . Boston

NOTE—The photo shown here is the Air Conditioned Packing Room of his western factory.



**W. L. FLEISHER & CO., Inc.**  
NEW YORK CITY  
Design and Install all  
**STURTEVANT-FLEISHER**  
Air Conditioning Systems

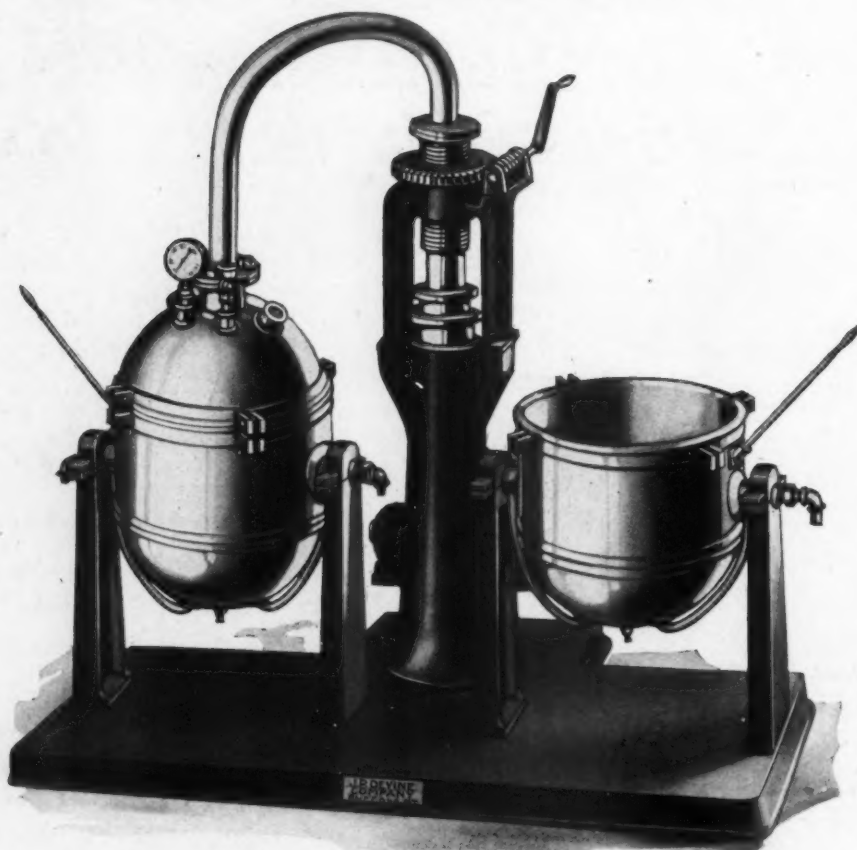


**Sturtevant**  
PUTS AIR TO WORK



# Devine Superior Contin

STEAM JACKETED



Cooker furnished complete with two Tilting Kettles, Swinging Vacuum Dome, Condenser and Motor-driven Vacuum Pump, all mounted on Continuous Cast Iron Base Plate, ready for steam, water and wiring connections.

Extra high Steam Jacket.

Each Kettle alternately used as Melter and Vacuum Cooker, without transferring syrup, preventing grained and cloudy batches.

Capacity, 200 lbs. per charge.

J. P. DILL

BUFFALO, N. Y.

SOLE AGENTS:

SPECIAL MACHINE COMPANY



# Continuous Vacuum Cookers

GAS HEATED



Cooker furnished complete with two Portable Kettles, Swinging Vacuum Dome, Condenser and Motor-driven Vacuum Pump, two Gas Furnaces with Motor-operated Air Blower and Permanent Pipe Connection, all mounted on Continuous Cast Iron Base Plate, ready for gas, water and wiring connections.

Each Kettle alternately used as Melter and Vacuum Cooker, without transferring syrup, preventing grained and cloudy batches.

Capacity, 100 lbs. per charge.

## DINE CO.

NEW YORK

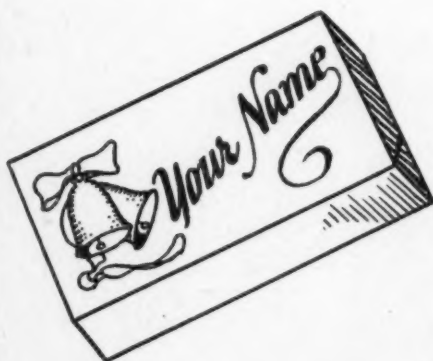
SELLERS:

NY

39 Courtlandt Street, New York City

# Special Holiday Packages

*Here's how you can get  
them—at cost to us*



THE first thing the candy consumer sees is your package. If that is pleasing—it not only helps to make the sale—but puts a person in a better mood for enjoying your product.

You can now have such packages at small cost and without the loss of being "left" with a single box!

Here's the plan—

Send us your one and two pound boxes for size. Tell us how many packages you figure on selling for New Year's, Lincoln's Birthday and Washington's Birthday.

We will ship you the desired quantity of handsomely lithographed wrappers, appropriate to each event and featuring your name. You wrap these around your regular boxes. Then, after the holiday, should you have any packages unsold—simply tear off the holiday wrappers and put your boxes back in regular stock!

A simple, efficient and low-cost method of boosting business.

We offer these wrappers to the trade at cost to us—in accordance with our policy of complete co-operation.

Get your order in before November 15th.

## Runkel's Chocolate Coatings

*If anything better could be made—we'd be making it! The Runkel leadership in the field is evidenced not alone by the quantity sold, but by the number and type of confectioners using Runkel's Chocolate Coatings.*

RUNKEL BROTHERS, INC., 450 WEST 30th STREET, NEW YORK

# Send for this literature—

It gives practical recipes which have been tested and proven by successful confectioners.

It will help you make the best candy,—

So will

**KOKOREKA**

For Chocolate Coatings and Caramels

**PLASTIKO**

For Fillings

**PARASUB**

For Easter and Penny Goods



Our practical demonstrators "Armitage" and "Hickey" are in the field constantly, working with the superintendents and practical men of the candy factories. This is part of our service. Can we be of service to you?

Write for free samples and booklet—"Science in Confectionery;" also for our new special literature "Uses and Abuses of Chocolate Coating," "How to Salt Peanuts" and "Popping Corn with Ko-Nut."

**INDIA REFINING CO.**

McKeen and Swanson Streets  
PHILADELPHIA

Stocks Carried in All Principal Cities

**Ucopco**  
**Pure Food**  
**Gelatine**

**"Open Your Mouth and  
Shut Your Eyes"**

You, too, will be agreeably surprised at the improvement in your Marshmallow pieces when you start using UCOPCO Gelatine.

Their meaty body and fluffy tenderness immediately popularize them.

Then—with eyes wide open, the consuming public will look for your package and your trade name.

**The United Chemical & Organic Products Co.**  
4200 S. Marshfield Ave. 401 E. 45th Street  
Chicago, Ill. New Orleans, La. New York City

*"UCOPCO Comes Sealed  
in Red Drums"*

**Ucopco Pure Food Gelatine**





# The Mark of Proven Quality

## Here are Senneff-Herr's "BIG 3"

**Egg O Creme:** A soft, snowy white, velvety, starch cast center cream, that ripens readily and holds moisture indefinitely.

**X-L Cream Caramel Paste:** Contains a large percentage of real, pure, sweet, rich cream, giving it a wonderful creamy flavor.

**Nougat Whip:** The product that is unequalled in making light, fluffy, Hand Roll Centers, Nougat Bars, etc.

In the face of keenest competition **QUALITY** always **WINS**. We are at your service to make you a winner. Along with quality we have the price that will interest you, together with loyal individual co-operation of expert candy makers.

*Let us send you a trial order  
on approval and you be the judge.*

**WHY DELAY? ACT TODAY.**

The "CANDY MAKER'S GUIDE" is yours for the asking. Send for your copy.

## SENNEFF-HERR COMPANY

Incorporated

**STERLING, ILLINOIS**

REPRESENTATIVES IN ALL LEADING CITIES

# Essential Oils, Fruit Flavor Bases, Cumarin and Vanillin

---

Seasonable Offerings:

**Oil Peppermint, Guaranteed Absolutely Pure and of Finest Flavor**

**Oil Lemon and Sweet Orange, F. B., Handpressed  
of Unexcelled Quality**

## Hard Candy Flavors

APPLE  
BANANA  
BLACKBERRY  
CHERRY (with Pit Flavor)  
CHERRY (without Pit Flavor)  
CHERRY, Wild  
CURRANT, Black

CURRANT, Red  
GOOSEBERRY  
GRAPE  
HONEY  
LOGANBERRY  
PEACH  
PEAR

PINEAPPLE  
RASPBERRY  
ROSE  
STRAWBERRY  
STRAWBERRY, Preserved  
VIOLET

THE reception accorded to this new group, which we placed on the market only a short time ago, has been gratifying and supports all we claim for them. These flavors are of the highest concentration, have the delicious aroma of the fruit itself and have been manufactured with a special view to permanence and TO WITHSTAND CONSIDERABLE HEAT. In addition to the large

amount of natural extractive matter from the fruits present, the Flavors contain sufficient Ethers, Esters, Vegetable Tinctures, etc., to provide the necessary strength and impart the special characteristics necessary and claimed for this group.

For all other kinds of confectionery, particularly cream work, the following groups have been successfully employed:

## TRUE FRUIT AROMA ESSENCES

Extra Concentrated

which represent nothing but the extractive matter of SOUND, RIPE FRUIT; and our

## FRITZBRO-AROMES

which are the IDEAL FLAVORS OF HIGHEST CONCENTRATION, based on Fruit Extractions and fortified with other harmless ingredients to accentuate the SPECIAL CHARACTERISTICS of the respective fruit.

With these lines, you can solve ANY PROBLEM of flavoring candies, of whatever kind they may be. Samples and further details will be cheerfully furnished upon application.

---

# Fritzsche Brothers, Inc., New York

Chicago Branch: 33-35 West Kinzie Street

*The Mark of Quality Coconut Products*



## **Unvarying Quality Is What Counts in Prestige and in \$'s and cts.**

And the "Same as Last" has come to be the password to worth while Quality. Almost any product may be good once, twice or a dozen times. Then when you are counting on it most—it fails you. Prestige and bank account suffer.

That's why successful manufacturers have come to stick fast to the Butters they can always depend upon to be the Same as the Last.

### **AMERICAN COCOANUT BUTTERS**

Are as unchanging as were the laws of the Medes and Persians—the quality is absolutely unvarying. We select the cocoanuts. We make the Butters, therefore we can guarantee them always to be fresh and pure when they reach you, to be scientifically perfect as to melting points and to remain free from rancidity under any and all conditions.

If you have been using American Coconut Butters just drop us a line saying "The same as last." If you would like samples, your request will be promptly honored.

#### **THE BUTTERS OF QUALITY**

##### **ACOMO**

For chocolate work, Caramels, Nougats, Chews, Fudges and Butter Scotch.

##### **ACOMINE**

For Kisses, Salting Nuts, Slab Dressing, Pop Corn Confections and Fillers for Hard Candies.

##### **MAROKO**

For Layer Caramels or Nougats and as Fillers for delicate wafers.

## **American Coconut Butter Company**

**CHICAGO**

**127 N. Dearborn St.**

**NEW YORK**

**297 Fourth Avenue**

To insure prompt service, complete warehouse stocks are maintained at the principal distributing centers

## Follow the Leader



It's an old game you've played many times as a youngster.

Add an S to Leader and you make of the old game a Maxim of Successful Business.

Pick out the manufacturers who lead in your line—find out what products they use—then

## Follow the Leaders

The leaders in fine, top-grade candies and confections have been using

# Nucoa Products

for more than twenty-five years. They know that Nucoa Butters guard their trade reputations—know that these ever-sweet Products give 100% results in use; know that they build the come-back-for-more trade—the only kind that strikes the high notes on the cash register.

### *Here's a Better Butter for your Every Need*

**NUCOA BUTTER**, a hard butter for rich, satiny chocolate work, perfect caramels, nougat, taffies and all chewing candies.

**NUCOLINE**, a soft butter, for salting nuts—the true flavored, keep-sweet kind, that are money makers; also for slab dressing, popcorn confections, etc.

**PLASTIC NUCOLINE**, for layer caramels that literally melt in your mouth, and as a filler for delicate wafers.

Why experiment when you can follow the leaders and be sure? Samples of Nucoa Products gladly sent on request.

## THE NUCOA BUTTER COMPANY

also makers of Kandex for perfect caramels

*Refinery Sales Department*

NUCOA BUILDING, 4th Avenue at 23rd Street, New York City



## *Remember—*

**T**O make good candy at all times—not just sometimes, you cannot afford to use make-shift raw materials and substitutes. You must buy and use standard products at all times—products that are uniform; uniform sugars, uniform gelatines, uniform flavors and uniform colors.

And when you want to use *Nulomoline* be sure you buy *Nulomoline* because *Nulomoline* is standard and is uniform at all times.

---

### The Nulomoline Company

111 Wall Street  
NEW YORK, N. Y.

BOSTON

CHICAGO

# Flavor Value

---

Value is not composed of a single element; mathematically speaking, it is a function of both price and quality; it can only be computed on the basis of price paid and quality received.

The wise buyer of flavoring ingredients confines his purchases rigidly to sources of supply which guarantee him the maximum return in value, the most economical co-ordination of price and quality.

Flavoring materials recommended by the House of Ungerer meet this requirement to the complete satisfaction of the most exacting purchaser.

We urge exhaustive test of our

**OZONE-VANILLIN**

**OIL PEPPERMINT**

**OIL WINTERGREEN**

**OIL ORANGE ITALIAN**

**OIL ORANGE WEST INDIAN**

**OIL LEMON SUPERFINE**

**SIMILE FRUIT ESSENCES**

**NATURAL FRUIT FLAVORS**

**CONFECTIONERS' FLORAL FLAVORS**

---

*"Our Quality Is Always Higher Than Our Price"*

---

**UNGERER & CO., New York**

**124 West Nineteenth Street**

**CHICAGO**  
**189 No. Clark Street**

**PARIS, FRANCE**  
**11 Rue Vezelay**

---

# The Evolution of the Candy Slogan

by *E. B. Hutchins*

*The Bonita Company of Fond du Lac*

**T**HE candy slogan cannot spring into full grown activity all at once any more than can any other institution. Like all other institutions, the candy slogan must come into its own through growth or evolution. The following may perhaps represent the steps through which the candy slogan must pass:

- |                                |   |
|--------------------------------|---|
| 1. Interest in the slogan      | } on the part of the industry,<br>including candy manufacturers<br>and candy dealers. |
| 2. Enthusiasm for the slogan   |   |
| 3. Co-operation                |   |
| 4. UNIVERSAL USE OF THE SLOGAN |   |

*Then We May Expect to See:*

- |                                  |                              |
|----------------------------------|------------------------------|
| 5. More interest in candy.       | } on the part of the public. |
| 6. Increase in candy consumption |                              |
| 7. BETTER CANDY BUSINESS.        |                              |

Interest in the slogan was aroused to such an extent that it was adopted by the National Confectioners' Association at their annual convention in Chicago in May. It is now up to all of us to get enthusiastic about this candy slogan and co-operate in using it universally. You will then enjoy bigger and better candy business.

In the evolution of most institutions there is a stage similar to the monkey stage. If there is a monkey stage in the evolution of the candy slogan we want to glide over it rapidly and reach the stage of highest efficiency as quickly as possible.

It is highly important that the candy slogan be not stunted in the early period of its development. It is very easy for an institution, like a living being, to have its growth so retarded in its youth that it never reaches its fullest possible vigor.

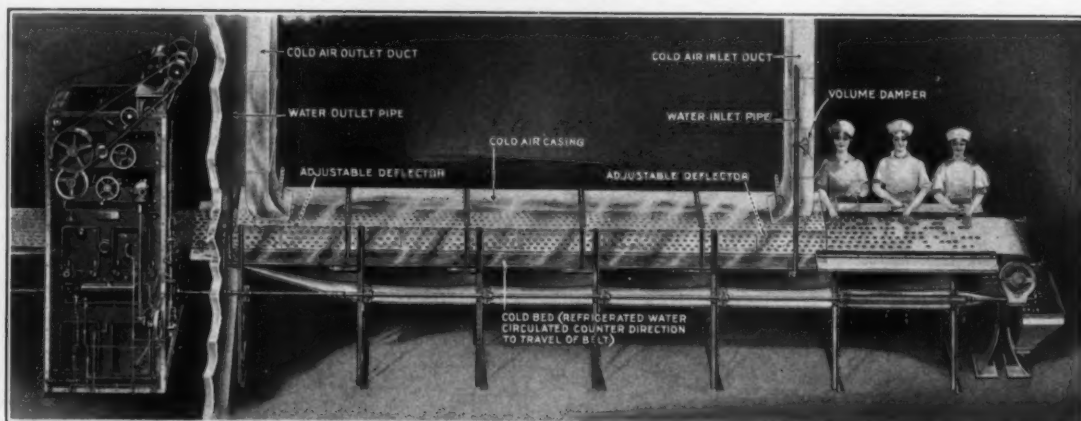
The rapid and proper development of the candy slogan means so much to every factor of the candy industry that it behooves all of us to get behind the candy slogan NOW and tie it up with every bit of advertising that has to do with candy. A sympathetic study of the slogan in connection with candy advertising will show that it can be used to good advantage with any kind of candy advertising that is worth while.



# The "Coldbed" Chocolate Drying and Packing Table

Directly Connected to Enrober

Patents Pending



## FROM THE ENROBER TO THE PACKER WITHOUT ANY HANDLING

The Enrober delivers its product directly to the belt on the COLDBED Table and, after traveling a distance of 25 or 30 feet in six or seven minutes, the goods have become properly set and chilled, ready to pack. The gloss is unsurpassed and the bottoms have the same fine finish as the top. Packing is done directly from the table.

In operation, the carrier belt travels in immediate contact with a hollow metal table, through which refrigerated water is constantly circulated, so that the bottoms of the chocolates are properly cooled and set. At the same time refrigerated air is circulated through the surrounding casing in direction opposite to the travel of the belt. The air is constantly recirculated in a closed circuit and can be maintained at a much lower temperature than the surrounding atmosphere of the room, securing greater efficiency without discomfort to the operators.

By regulating the flow of the water a perfect relation can be maintained between the temperatures above and below the material.

Perfect results are obtained in such a simple, practical, common sense way that the method will be instantly appreciated by every practical man. With the "COLD-BED" Packing Table there is no intricate machinery. No mechanical parts to get out of order. It is foolproof.

The entire equipment takes but little floor space. It is only twenty inches wide and thirty feet long, including the packing space for six operators. The table being made up in sections, it can be lengthened or shortened at will, so that it can be adapted to a restricted space or to a greater speed of the enrober.

The "COLD-BED" Table is much less expensive in first cost than other methods and also in cost of erection.

The goods having been properly chilled throughout, retain their color and their gloss without any deterioration after packing.

Repeat orders show satisfied customers.

INCREASED PRODUCTION

REDUCED COST

IMPROVED QUALITY


Also Manufacturers of  
The Bentz Air Conditioning Apparatus  
The "Chillblast" Refrigerating System  
(Patented)  
The Bentz Drying Methods for Starch Rooms

## BENTZ ENGINEERING CORPORATION

Main Office: 90 West Street, New York

Factory: Newark, New Jersey





## EDITORIAL

### "Do Your Christmas Shipping Early"

It is a relief to have the tracks cleared of strikes and tieups in transportation, but we realize that every facility for moving merchandise which the railroads of the country possess will be taxed to the limit this fall with the bumper crops, the speeding up of factories and the usual congestion of coal shipping which comes with the first hard freeze.

Those of us who order early and ship early will avoid a freight jam later in the year which is almost inevitable. Remember, too, that early buying, especially of equipment, will let the other fellow do *his* Christmas shipping early.

### Neilson's Salesmen Have the Management Viewpoint

"We want each of our salesmen to regard himself as the district salesmanager for his line and to co-operate with his dealers in the spirit of a salesmanager working with his men," says R. P. Smith, general salesmanager, William Neilson, Ltd., manufacturing confectioners of Toronto, in the October issue of *Printer's Ink Monthly*.

Mr. Smith gives a very interesting story of their sales policy and merchandising plans which have proven so successful in establishing a distribution of their package, bulk and solid chocolate lines throughout Canada. Their policy has solved the problem of getting salesmen to appreciate the manager's viewpoint and work and think in terms of profits rather than volume.

Among other things, the duties of the salesmanager include, in the words of Mr. Smith, "Everything he can profitably do to help the dealer sell. It means that our men cannot be content with selling goods to the retail merchant, but after he has made the sale, must help the merchant clear the goods off his shelves at a profit.

"The supply of dealer helps that our men carry in their cars are of real assistance in this respect. We spend money freely for the most effective selling helps we can find—at all times, for example, we have available at least two dozens of lithographed store posters and counter cards, all of a quality that will grace any store.

"A Neilson salesman pushes his dealer helps to the limit, because he knows that they will help his customers sell our products.

He watches over his customers' displays and their fixtures and their store arrangement—in fact, we maintain at the plant a special store layout department, which confines itself to drafting changes of layout for dealers' store plans which our salesmen have sent in.

"Our salesmen function very effectively as salesmanagers for their dealers. They not only advise, but also they take off their coats and help—by dressing windows, arranging counter displays and doing other jobs of that sort. We regard those jobs, and also the job of checking the retailer's inventories, as among the really important duties of a salesman.

"And to not a few other duties, besides these selling functions, we hold our men. This is, of course, an outgrowth of the basic idea to which I have already referred—that the sales department is responsible for all the activities in the business, from shipping the merchandise to collecting the account."

### Who Wants Foreign Distribution

At this time when our industry is suffering for want of more distribution, the foreign trade situation and opportunities for exporting American confectionery might well be given special consideration.

For instance, here is an inquiry just received:

*"Purchase desired of sugar candy of the cheaper quality, especially "American hard gums," assorted flavors, and white peppermint creams, about 50 tons per annum, in periodical shipment.—Wales. Quotations, c. i. f. Swansea or Bristol Channel port."*

THE CANDY MANUFACTURER is compiling information regarding the confectionery situation in foreign countries and will present this matter in a Foreign Trade Number or Section of an early issue of this magazine.

In the meantime we would like to hear from manufacturing confectioners who are especially interested in developing foreign business and to have their suggestions in directing our investigation of foreign trade opportunities for American confectioners so our report will be of greatest value to our readers.

Remember the watchword: "Competition at a Profit."



## THE LABORATORY

# Is Candy Ever Poisonous?

by Dr. A. P. Bryant

Consulting Chemist, National Confectioners' Association

**E**VERY year accounts appear in the newspapers about poisoning by candy, and the yellower the newspaper the more lurid are the stories. Upon investigation about nine hundred and ninety-nine out of every one thousand cases will prove to be unfounded. The question arises, therefore, "Is candy ever poisonous?" By this we mean, may candy under certain conditions act in such a way as to be in itself deleterious to the human organism, or must all cases of candy poisoning be considered as due to disturbances of the digestive system either on account of over-indulgence in candy or other food materials, or from some outside influence?

In this discussion we must eliminate, naturally the very infrequent cases of intentional poisoning where arsenic, strychnine or other deadly poison has been wilfully added to a small portion of candy, usually home-made, with criminal intent.

During the years that the writer has been connected with the National Confectioners' Association as Consulting Chemist, numerous instances have come up when candy was alleged to have caused violent illness and even death. In no case, however, has most careful investigation of the circumstances attending the case shown that the candy was in any way poisonous.

Most cases where candy had been claimed to have caused sickness or death have been ascribed to ptomaine poisoning. This kind of poisoning is due to decomposed products found from compounds containing nitrogen, and inasmuch as candy does not contain this class of compounds it *could not* cause ptomaine poisoning. A specific example will illustrate the usual alleged poisoning case of this nature:

### A Few Instances

A child bought some candy at a five and ten cent store, and that same night was taken violently ill and nearly died. It was claimed that the candy was responsible for the illness of the child and suit was brought against the company at whose store the candy was purchased. Samples of the same lot of candy as sold to

the child were secured and tested and found to be non-poisonous. It developed in the trial of the case that the mother of the child had purchased some liver at a cheap butcher store, and that this liver was badly tainted. It was also brought out that the child has thrown up pieces of half-chewed, undigested liver, and it was evident that the trouble came not from poisoning by the candy but from decayed animal matter which the child had eaten at the same time as the candy. Other children had eaten of the same candy, but did not each much, if any, of the liver and were not sick.

In another instance, a party of young people finished up an evening's entertainment by freely indulging in sweets. One or two of the party were taken violently ill and it was claimed that the candy had poisoned them. Examination of the candy from the same lot showed no harmful ingredients present and even when it was fed to guinea pigs in quantities equivalent to several pounds for an average sized person no ill effects could be detected. It was evident that illness was caused not from any poisonous principles in the candy but to overeating and consequent disturbance of the stomach. Plain, ordinary old-fashioned stomach-ache, caused by overloading the stomach with rich foods, is the basis of the majority of so-called candy poisonings, and these might just as well be ascribed to some other material which had been taken into the stomach. But it would seem that candy is usually made the "goat."

Sometimes the stomach is disturbed not by so much overloading with candy as by eating certain flavors which may not agree with that particular person. It is well known that some people are made sick by eating strawberries, others by eating butter, while eggs may not agree with the third. So-called banana flavor is nauseating to the writer, whether occurring in candy, desserts or other foods. It is only in this way that we can account for any genuine ill effects from candy itself and even in such cases the candy could not be called poisonous.

Color in food materials might theoretically cause poisoning, because some colors are actu-

(Continued on page 41)

# Coach the Retailer in Candy Merchandising

by V. L. Price

Chairman Publicity Committee, National Confectioners' Association

## How to Sell More Candy

**W**E pass along for your consideration a few suggestions as to how you can sell more candy. You can accomplish this by looking out for the conditions discussed below, viz.: The wrong location of a candy showcase in the retailer's store and improper and unattractive display of candy. Have your salesmen always on the alert to correct these conditions, which, if corrected, will greatly stimulate candy sales.

## The Proper Display of Candy

There is a great difference between selling candy and selling sponges. The latter are purchased when the old one is worn out. The chances are nine times out of ten a customer will ask for a sponge if he needs one whether they are on display or not and their display is therefore not a great help. The things to display are the things largely bought upon impulse or suggestion—candy, for example.

One time there was a salesman who asked a retailer how his candy sales were. "Not so good," was the reply. The salesman then started looking around to locate the trouble. He found the candy department back in a dark corner and sponges in the front showcase. With the dealer's permission he reversed the locations and talked to the man in question on how, in many instances, candy purchases are impulse purchases, stimulated by the appealing appearance of the candy. He showed the retailer how candy cannot be sold to get the best results in the same way as other articles. On his next visit he found that the candy sales of this retailer had more than doubled by displaying candy where it could be seen.

Instruct your salesmen to always be on the lookout to try to change the location of a dealer's candy department wherever he finds it in the wrong location. The salesman should try to have candy displayed in showcases where the retailer can use his display space to the best advantage. Prevail upon the retailer to emphasize his candy, which requires prominent display to produce the greatest sales.

Those retailers who do not use the proper methods must be made to realize that the way they can arouse the hunger appetites of those who pass by their stores or come into their stores is to put candy where it can be seen.

Other important constructive work that you salesmen can do with the retailer is to work with him on the popular way in which to display candy from the standpoint of cleanliness and appearance. Needless to say, the showcase must be unusually clean and bright and the candies neatly arranged so that they present a pleasing and appetizing appearance to the eye.

Your salesmen should see that no retailer gives his candy an unattractive display mate. There is not so much danger of this in a confectionery or grocery store as there is in a drug store. In the latter we

have seen candy displayed side by side with many objectionable articles. To give you a good example: We have seen a stock of candy and bug killer liquid in the same display. There was a window card on the bug killer which left nothing to the imagination as to how the bug died. This display also killed any candy sales from that window.

## Advertising Material

Help your retailers attract attention to their candies. If you do this he will show a further increase in sales for himself and consequently for you. This can be done by providing him with attractive advertising material both for inside his store and for his windows. Windows have great advertising value and many retailers do not take full advantage of the space or use it to obtain the best results. He should put more than his goods on display; he should say something about them—suggest for whom, when or why his candies should be purchased.

As a means of attracting attention to candy in general the National Confectioners' Association has prepared, as you know, a most attractive metal counter sign of the slogan. Take advantage of this help, and if you have not already done so, put in a supply. Have your salesmen carry a sample so that dealers who are not provided can request same. Display the sign prominently. It will suggest candy purchases to those who see it. Supply your jobbers and retailers with these signs.

## Thanksgiving Display Coming

We are also preparing now a most attractive window display hanger for Thanksgiving. It will attract attention combining as it does the slogan, "Remember Everybody Likes Candy," a suggestion to buy candy for Thanksgiving and an illustration full of appealing interest. They will be ready early in November, so when we advise you that they are on hand be prepared to distribute these to your customers. It will help your Thanksgiving sales.

We have tried to show you in this article why candy selling has to be handled differently than other articles or products. If you want to enjoy the profits of increased candy sales, see that your salesmen help your jobbers and retailers in the matter of getting a prominent location for candy in every store and see that this department presents a clean, neat, appetizing appearance, that the windows are used generously for candy display, and help the retailer attract attention to the candy in his store and in his windows by attention-getting advertising material.

This can be done by writing a constructive pamphlet to be distributed in addition to the work of your salesmen. These things must be handled with extreme tact, but you will be surprised how much this will help your business and the sales of your candy. One of the best ways to increase the consumption of candy and of your products in particular is to show the dealer how he can sell more candy and help him do it.



# Cacao Products

## I—Their Source, Distribution and History

The first of a series of five articles on Cacao Products

by **Robert Schwarz and M. A. Posen**  
of the Schwarz Laboratories

*The title "Cacao Products," as used in this series of articles, refers to the various commercial products derived from the seeds of the cacao tree, with or without the addition of other substances. The more important of these commodities are: cacao or cocoa beans, nibs or cracked cocoa, plain chocolate or chocolate liquor, sweet chocolate or sweet chocolate coatings, cocoa powder, sweet cocoa, milk chocolate, milk cocoa and cocoa butter.*

*The Schwarz Laboratories have for many years specialized on the chemical problems of the chocolate industry and have made a special study of the practical manufacturing problems of chocolate and cocoa plants.—EDITOR.*

*Exclusively for The Candy Manufacturer*

**T**HE story of the origin and rise of the cocoa and chocolate industry to its present magnitude should interest the candy manufacturer, because, aside from sugar, cacao products constitute the largest single ingredient of candy and confectionery.

The many valuable commercial cacao products are all derived from the cacao tree, known to botanists by the picturesque and euphonious name of "Theobroma Cacao." The name "Theobroma" was first used by the famous botanist Linnaeus in 1720. This word is derived from two Greek words, "theos," meaning God, and "broma," meaning food, so that the word literally translated means "Food of the Gods." This would seem to indicate the high esteem in which the great Linnaeus held his favorite drink, chocolate.

### The Cacao Tree

The cacao tree is a native of moist, warm regions, which include the tropical portions of Central and South America, extending from Mexico to Brazil. The important cacao growing centers are Mexico, Panama, Trinidad, St. Lucia, Hayti, Cuba, Jamaica, Guadelope, Porto Rico, San Domingo, Venezuela, Colombia, Ecuador and Northern Brazil. The tree is cultivated successfully in the Philippines, Ceylon,

Java, parts of Africa and Australia, and in some other regions.

The tree is a small one, averaging from 12 to 20 feet in height, although some trees have been known to reach a height of 40 feet. The main trunk averages from 5 to 8 inches in diameter.

The flowers are very small, growing on the main stem of the branches, some singly, others in bunches or clusters. The bright red blossoms are succeeded by pods, somewhat resembling cucumbers in shape, from 9 to 12 inches long, and from 4 to 6 inches in diameter. The pods are first green, but turn yellow and then red on ripening. Within the pod, closely packed and embedded in a sweetish pulp,

are from 20 to 40 seeds. These seeds are about the size and shape of almonds, and when they have been fermented and dried, they constitute the cacao beans of commerce.

The more important commercial varieties of cocoa beans (named from their geographical origin) include Accra, Ariba, Bahia, Caracas, Ceylon, Guatemala, Hayti, Java, Machal, Maracaibo, Puerto Cabello, Sanchez, San Domingo, San Thome, Surinam and Trinidad.

The various processes used in separating and preparing the beans for the market will be discussed in a later article. Meanwhile, let us trace briefly the history of this little tree, whose products, especially cocoa and chocolate,

### The Complete Serial on Cacao Products

**Article 1—Introductory. Source, distribution and history of Cacao Products.**

**Article 2—Varieties, composition, commercial production of Cocoa and Chocolate.**

**Article 3—Standards of Cacao Products and forms of adulteration.**

**Article 4—Application and uses of Cacao Products.**

**Article 5—Laboratory control of Cacao Products.**



have achieved well-deserved popularity in every civilized land, and have been carried by explorers into the sweltering tropical wilderness and to the frozen wastes of the north and south poles.

### The History of Cacao Products

The commercial history of cacao products begins with the return of Cortez, conqueror of Mexico, to Europe about 1520. He brought back with him among other examples of the natural resources of Mexico, a small supply of cocoa beans. On landing in Mexico, he found a flourishing, well diversified culture of the cacao tree, the result, apparently, of the experience of several centuries. In his first letter to Charles V, Cortez wrote that the cocoa beans were used by the Aztec Indians not merely to prepare a stimulating beverage, but also as money, the value of the beans as coins depending on their size. Cortez used the name *cacao* for the cacao tree, a word derived from the ancient Aztec name *cacava quahitl*. The natives called the fruit *cacavacentli*, the beans *cacahoatl*, and the drink prepared from them *chocolatl*. Thus, the origin of the modern name, chocolate.

According to Mexican Indian mythology, the cacao tree grew in the garden of Eden, where it furnished food exclusively for the Gods. Its introduction to the earth is attributed to Quetzalcoatl, God of the Air, who was entrusted with the task of bearing the seeds of the tree to man, who has indeed found it to furnish a "food of the Gods."

Montezuma, famous emperor of the Aztecs, is said to have partaken of no beverage other than chocolate. This was flavored with spices or vanilla, and beaten to the consistency of a heavy syrup. Montezuma drank his chocolate from a golden goblet and stirred it with a golden spoon. After emptying the goblet it was thrown into the lake adjoining the palace. When Cortez conquered Mexico, a large number of golden goblets were recovered from the lake by his men. It would seem, therefore, that Montezuma was quite fond of his chocolate. Mexican mythology does not help us to determine the approximate date when cacao was brought into Mexico from Eden. Careful students of historical botany agree however, that

the cacao tree has been cultivated in America for three or four thousand years.

Despite many centuries of cultivation and local consumption of its products, the cacao tree attained no commercial importance until after the conquest of Mexico by Cortez. For a time the preparation of chocolate was kept secret by the Spaniards and the beverage grew in popularity in Spain. Like most innovations, the use of the new food drink found some opponents among the ignorant, superstitious and fanatic. It had a hearty defender, however, in Cardinal Brancatio, who hailed it as "a necessity of life, *like wine* (sic!) the use of which should not be forbidden."

It was impossible for Spain to keep her secret very long, however, and in 1606, Carletti, an Italian, who had grown fond of chocolate during a stay in Spain, introduced it into Italy, where it rapidly grew in popularity. This step marked the beginning of the universal popularizing of cacao products. Carletti was responsible for much of this development by his dissemination of directions for preparing the products.

A curious incident attending the early commercial history of chocolate, was the contention by some persons that this beverage inflamed the passions. Thus, in 1624, Rausch, in Vienna, urged that the use of chocolate by monks should be forbidden, as it caused them to commit excesses. Nearly a century later, an English editor warned his feminine readers "to be

careful how they meddle with—chocolate—and like inflamers, which I look upon as very dangerous."

These attacks, however, were isolated examples, and the excellent food value and appealing flavor and taste of cacao products, resulted by the end of the seventeenth century, in the publication of a large number of articles and monographs praising and recommending chocolate as a stimulating beverage, having a universal appeal and high nutritive value.

Chocolate was introduced into France during the reign of Louis XIII. In the year 1659 a Frenchman was granted the monopoly for the manufacture and sale of chocolate in France. He built a factory and enjoyed the monopoly for thirty-three years. In 1693, in the reign of

(Continued on page 50)

## What Are Your Problems on the Manufacture and Handling of Chocolate Coatings, Liquors and Cocoa Butter?

We would like to hear from superintendents of chocolate factories, from factory managers and foremen of chocolate departments, hand dipping departments, enrober men—in fact any and everyone interested directly in the manufacture and handling of cacao products. Tell us in detail what your problems are and what points you would like to have taken up and covered in this series of articles. Write up a chapter from your own experience in chocolate work that you believe would prove interesting to other practical chocolate men.—Editor.

# More About Corn Syrup

The second of a series of articles on Corn Syrup

by Dr. W. P. Cutler

*Dr. Cutler has practiced medicine for twenty-five years, was formerly Food Commissioner of Missouri and is now Secretary of The American Association of Manufacturers of Products from Corn.*

*It is perhaps the irony of fate that corn syrup, the most nutritious and valuable raw material entering into the manufacture of candy should be, perhaps, the most misunderstood product on the supply list and subject to persecutions even from inside the factory doors of our own industry. There is no occasion for any manufacturer to make any apology for the corn syrup (don't say glucose) used in his goods; but on the contrary should make capital of the fact that his candies contain corn syrup and thus possess a known food value second to no other ingredient available for quality candies.*

*Dr. Cutler's article in the next issue on "The Physiological Action of Corn Syrup" proves this point and will be a revelation to some manufacturers who have the impression that corn syrup is a necessary evil in candy making. This series of articles is an authoritative presentation of this subject based on an exhaustive impartial research, all of which is substantiated by recognized authorities.—EDITOR.*

*Exclusively for The Candy Manufacturer*

**S**UGAR, whether it be from cane or corn, is an absolute necessity. Its place cannot be taken by any other food—for sugar or sweets is that which gives energy to the human machine.

As shown by the table published in the August, 1922, issue of this journal, the principal sugars are:

- Sucrose, or cane sugar.
- Dextrose—Glucose made from corn starch.
- Levulose, or honey.
- Lactose, or sugar of milk.

In the last great war, sugar was up to an alarming price and very hard to get.

In the Napoleonic war, the sugar situation was not so highly developed as it is today, nor was commercialism so well developed, yet the prices of sugar were sky high.

## The Discovery of Corn Sugar and Corn Syrup

During the Napoleonic war the blockade of continental ports paralyzed the importation of sugar, therefore some other source of supply was essential. A prize of one million francs was offered for a process which would successfully manufacture a sugar product from plants of home growth. The chemist came forward and a sugar was made from starch, and this secured the prize.

Out of this discovery has grown the greatest industry of making starch sugar and starch syrup from corn, and which we recognize as corn sugar and corn syrup.

## Our National Sugar

As most of the starch in this country is made from the king of all cereals—CORN—there is a sentimental reason why, apart from its wholesomeness, the people in this country should be glad to eat a product which is made from our principal cereal. It will be interesting to note, that last year over 3,200,000,000 bushels of corn were used.

The Japanese have the honor of having produced the first candy and (quoting from Mary E. Green's book, "Food Products of the World") "realize better than the western nations, the value of glucose as a food, having long manufactured it from the starch of barley, and have given it the attractive name of 'barley honey.'" It is said to form part of the daily food of every Japanese household, combined with rice flour, to make a very delicious sweetmeat. From the book above quoted we read: "It is not only wholesome and nutritious but even more easily assimilated than the cane sugars."

Because of the fact that corn syrup and corn sugar can be produced much more cheaply in this country than elsewhere, owing to the immense production of corn, referred to above, no importation is necessary, as with other forms of sugar.

Corn sugars and syrups are not alone used in the manufacture of confectionery, but wherever a sweet is desired or necessary. There is no acid reaction as in the case of some other sugars and, therefore, it can be used in baking

and cake-making—with either sweet milk or water and baking powder.

Corn syrup is very useful, apart from its nutritive value, in the manufacture of anything which contains sucrose or cane sugar for the reason that it is neutral in flavor, having no pronounced flavor of its own other than a partial sweetness and, therefore, does not impart its own particular flavor, as do some other sugars, to the resultant product.

Of course, every manufacturer confectioner knows that the use of corn syrup in his products prevents the crystallization of other sugars, whether it be cane sugar or honey.

The introduction of "glucose," or as we know it, corn syrup, manufactured from the starch of corn, at once incited the animosity of those who manufactured a competitive article, and the word "glucose" was seized upon to prejudice the minds of consumers against the use of corn syrup.

As new uses were found for corn syrup in the manufacture of food products and it began gaining ground, competitors insistently called attention to the name "glucose," in an endeavor to excite more prejudice—but it grew in favor. Who does not remember the time when tomatoes were looked upon as most poisonous and yet today they occupy a valuable place on our table.

#### **The Nutritional Value of Corn Syrup**

Sugar itself was regarded only as a medicine in Queen Elizabeth's time—as the knowledge of physiology at that time was limited and there was much doubt as to its safety as an article of every-day use. The fact is that it is only within comparatively recent years that the great value of sugar as a food has been recognized.

Honey originally was considered more wholesome, because it was found in nature.

It took many years of scientific research to show that starch not only must be converted into dextrose or sugar in the process of digestion, but that cane sugar must also be changed to dextrose-glucose before it can be assimilated in the body as blood sugar.

The juices of vegetables or fruits or trees yielded sugar if extracted or cooked, as discovered by primitive man.

In our ordinary speech, the word "sugar" refers merely to cane sugar. This is not accurate, because the chemist knows that it can be applied also to other than the sucrose group.

As shown above sugars are found in nature from various sources. For example, if you take a dried raisin and examine it, you will find on its surface little grains of sugar, amounting to from 15 to 20 per cent. This is not sucrose, but dextrose, or what is commonly known as grape sugar, one of the glucose group.

According to Webster, "glucose is that particular form of sugar existing in many animal and vegetable organisms.

Dextrose-glucose is the most generally and generously found of any sugar in nature. It is the only natural sugar.

#### **Analyzing the Table of Fundamental Sugars**

By referring to the table of sugars in the August issue of this magazine, it will be seen that honey and glucose have the same chemical formula.

It will also be noticed that there is but one more molecule of water in the formula for glucose than is found in the formula for sucrose or cane sugars and this molecule represents the difference in the degree of sweetness between sucrose and dextrose-glucose.

It would not be surprising if the ambitious and intelligent chemist, some time in the near future was able to locate the particular molecule of water in question. If he does, then there will be manufactured from starch

of corn the same product which is now known as "cane sugar." In other words, a product identical chemically with cane sugar and having all its properties.

It has also been shown in the first article of this series (August, 1922, issue) that starch is a carbo-hydrate, as is corn syrup, and is converted into the latter by the use of heat and moisture with a catalyzer in practically the same manner in which nature converts the starch into dextrose and the cane sugar into dextrose.

#### **Physiological Action**

In the growing of cane, nature first makes starch and then converts it into sucrose, or cane

(Continued on page 41)

***I**n the August issue was published a table showing the different fundamental sugars, the commercial and natural sweet products and the different combinations of the fundamental sugars in these products. To help keep in mind a clear distinction between the names of these sugars the following elementary definitions are given:*

**Sucrose**—The ordinary sugar made from cane or beets.

**Dextrose**—Made from starch by use of heat and acid catalyzer.

**Glucose**—Or Dextrose-Glucose (a property of corn syrup), the blood sugar.

**Maltose**—Made from starch by malting.

**Levulose**—The sugar of honey.

**Fructose**—Any fruit sugar.

**Lactose**—Sugar of milk.

**Dextrine**—Washed starch.

**Grape Sugar**—Fructose and Glucose.

#### **HAVE YOU ANY QUESTIONS?**

*Help us make these various articles on confectioners' raw materials of utmost practical value to you by sending in your questions or manufacturing problems.—EDITOR.*



# Flavoring Materials in Candy

by Dr. A. Vail Fuller

Director, The Frederic W. Murphy Laboratories

**A**MONG the various basic materials entering into the manufacture of confections perhaps none occupies a more important and more unique position than do the flavoring ingredients, nor should any substances have bestowed upon them more critical consideration in their selection and use.

For, after all, is it not the flavor of an article which is the determining factor in its selection? Would it be possible to produce, for example, a cream center of ideal texture and consistency encased in a coating of chocolate prepared from the choicest cocoa beans and possessing the requisite "snap," and to flavor this center with, let us say, turpentine and to market such an article? We fear not. On the other hand, a physically inferior but properly flavored article may and in fact does find a sale.

The above illustration may at a glance seem rather "far-fetched," but a little reflection will reveal an exaggeration in degree only and that fundamentally the principle is the same whether the flavor selected for demonstration be turpentine or inferior lemon extract.

Let us now consider the factors which go to make up the complex of sensations which are included under the idea expressed in the term *flavor*.

There seems to exist in the minds of most of us a confusion of the meaning of the terms *taste* and *flavor*.

## The Difference Between Taste and Flavor

Fundamentally, there exist but four separate and distinct qualities of taste, namely, sweet, sour, bitter and salt. Strictly speaking, a pure taste impression must be one of these four qualities or a combination of two or more of them.

Flavor, on the other hand, is a complex and consists in general of a *taste* plus a *scent*, with or without accompanying sensations which may modify or accentuate the effect.

Let us analyze, for example, the so-called "taste" of a glass of carbonated lemonade. We will find it made up of two of the primary taste elements, sweet and sour; the scent of oil of lemon; a temperature sensation, coolness; and a pricking (cutaneous) sensation.

While each of these factors plays its part in producing the effect, which in the language of everyday life we designate as "taste," the characterizing or distinguishing component is the oil of lemon. It is because of the presence of this aroma and this alone that we know we are drinking lemonade, and not orangeade or sarsaparilla.

## Psychology of Color

In passing, mention should be made of the psychological effect of color as applied to confections and beverages. The use of harmless artificial color rests on more substantial grounds than merely that it is pleasing to the eye. Its important function is that of preparing the organs for the gustatory and olfactory sensations which are to follow. Consider the emotional discord which would ensue upon tasting a drink or a frozen dainty which was colorless or colored green, but which possessed a pronounced strawberry flavor! It is indeed a truism that we taste with our eyes and our noses, as well as with our tongues!

In discussing the role played by odors in the sense in which they contribute so vitally to the impression of flavor, we took as our illustration a beverage. While it is true in the case of liquids, particularly carbonated liquids, that the aroma is sensed in a large measure by the act of inhalation with its attendant sweep of aromatized air through the nostrils, the fact must not be overlooked that there are air passages connecting the nasal and oral cavities. Exhaled air charged with volatile odorous substances is perhaps even more potent in conveying the flavor impression than would be that same air upon its inspiration. Practically, it is of greater consequence because of the wider variety of foods ingested in the solid than in the liquid form.

## The Six Distinct Types of Flavors

Let us now review the various types of flavorings available for manufacturing purposes. There are in use six distinct classes:

1. The so-called ethereal fruit flavors constitute a time-honored though waning class. They are composed in the main of synthetic organic compounds belonging for the most part to those groups designated as ethers, esters, amyls, etc., some of which actually do occur in fruits and many of which do not.

Their resemblance to the fruits whose names they bear are in many instances extremely remote. Recently the writer purchased several "strawberry" lollipops colored a more or less appropriate shade of red. Upon submitting them to several lay subjects and requesting them to name the flavor, the following replies were elicited: "Raspberry," "Cherry," "Peach." These subjects were evidently "tasting with their eyes." As a matter of fact, the predominant flavor was suggestive of banana, and was no doubt one of the amyls!

2. The true synthetic flavors constitute a group, small as yet, though of rapidly increas-



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## COMING

by Dr. Frederic W. Murphy

Frederic W. Murphy Laboratories

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| I. Problems Presented to a Chemist.               | III. The Meaning of Pure Food Standards.      |
| II. Factory Control from the Chemist's Viewpoint. | IV. The Building of New Types of Confections. |

by Dr. Stroud Jordan on "Coloring Material in Confectionery"

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| 1. Removal—"Decolorizing Carbons and Their Value to the Manufacturing Confectioner." | 3. Color comparisons and determinations.             |
| 2. Some causes of color in sugar products and their prevention.                      | 4. Commercial colors; their uses and abuses.         |
|  | 5. Standardization of colors for confectioners' use. |

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ing importance and of ever-widening possibilities. Such substances are the outgrowth of patient scientific investigation and are the products of the chemical laboratory rather than of the extract-maker's compounding room. They are to be distinguished from the preceding class in that they are nearly, if not quite, identical with the compounds produced by nature within the cells of the growing plant, and are actually the bodies to which the characteristic aroma is due. Examples are the simple synthetic oils of wintergreen, and cassia, and the compound oils of neroli, rose, and jasmine which are distinguishable from the natural oils only to the highly trained sense of smell.

So great is the importance attached to the isolation and duplication of certain of these naturally occurring aromatic bodies, such as vanillin, heliotropin, and the ionone of violets, that they are looked upon as milestones marking the progress of chemical science.

3. A third group may be regarded as a combination of the first two. Here the paths of the simon-pure extract-maker and the chemist meet and the result is a compromise. Certain of the "ethers and esters" as well as the natural oils are blended with the more recent products of the research laboratory and with various extracts and tinctures borrowed from the realm of the pharmacist. As an outgrowth of this convergence there has appeared a group of flavorings which are neither purely artificial, synthetic, nor natural, and, as is to be expected, their flavoring value is intermediate between the true and the strictly artificial.

4. A fourth and important class comprises the true-fruit extracts, which are prepared, as the designation indicates, by exhaustion of the fruit with appropriate solvents, followed as a rule by concentration to the desired strength.

The value of these extracts depends upon the grade of fruit selected and the methods of extraction and concentration employed. These two last mentioned factors are of prime importance inasmuch as they determine not only the

completeness of the removal of the odorous principles and their preservation, but also the extent of the contamination of the extract with foreign inert, or even undesirable substances such as pectin, albuminous matter, acids, and mineral salts.

The manufacturer who is producing goods of such a standard as to justify the employment of true-fruit flavors will be amply repaid if he insists on purchasing the best obtainable. Their quality and strength will more than offset their additional cost.

5. We now encounter a group of flavoring materials which represents a fusion of all four of the preceding, that is, a true-fruit base fortified by the addition of synthetic compounds, tinctures, etc. These "correctives" or "surrogates," as they are termed, are designed to imitate the natural substance as closely as possible and are introduced for the purpose of increasing the strength and developing the aroma of the fruit essences, particularly those which do not readily lend themselves to reduction to usable concentration.

While many of these fruit aromas are excellent products and certain of them possess a high degree of verisimilitude, the fact should be borne in mind in labeling goods prepared with them in conformity with the various Pure Food Laws that they are essentially artificial in character.

6. The sixth, but by no means least important, class comprises the various essential oils which are used for flavoring purposes either "as is" or more conveniently dissolved or dispersed in a suitable medium.

Space does not permit of our entering into a discussion of the chemistry of this most interesting class of aromatics, hence we will confine ourselves to their application in "soluble" form.

These essential or volatile oils, as they are sometimes called, possess one property in com-

(Continued on page 54)



Spray Pond on the Roof for Cooling Condenser Water in a Candy Plant.  
A Method of Cutting Down Operating Expenses.



Hard Candy Packing Rooms, Showing Distribution of Conditioned Air.

## Air Conditioning

The sixth of a series of articles on

### Refrigeration and Air Conditioning

and its Application to the Candy Industry

by **A. W. Lissauer**

*Refrigerating Engineer*

**Y**OU have undoubtedly noticed the more than numerous times I have made mention of the highest development of the application of the refrigeration art to the candy industry. It can be given a name which, to most progressive manufacturers is well known; that is, "air conditioning," or a system which is so arranged that it can, while reducing temperatures, also eliminate moisture and thereby giving to the interior of a candy factory weather which is absolutely independent of that outside. In simple terms, one might express the function of an air-conditioning system as the reproduction, every day in the year, of an ideal day which the manufacturer knows gives him the ideal product.

#### The Air-Conditioning System

In its essential form the air-conditioning system for the candy factory consists of a complete refrigerating system with cooling coils of the type which have passing over them a constantly flowing stream of water, arranged in exactly the same manner as the atmospheric condenser, previously described. This water, which is cooled by passing over the pipes, is pumped through nozzles in a chamber, through which air passes, in such a way that the water

is blown into a mist, mixing with the air and exchanging heat with it. The air temperature falls; the water temperature rises to a predetermined point, and then the water is separated

from the air, and runs over the cooling pipes, again to be re-used. In this contact of the air and the sprayed water, the air not only cools, but gives up its excess moisture, which is carried down with the spray water over the pipes. Many gallons of water are thus removed from the air during the hot, humid days.

#### Removing the Moisture From Air

The question is often asked me, how one can take moisture from the air by

means of a water spray. The answer is based on well-developed and well-defined laws of nature. The basis of calculation is that air at any given temperature can only hold a given amount of moisture when it is saturated. For instance, air at say 70° F. saturated will contain 8 grains of moisture per cubic foot (there being 7,000 grains in a pound of water). That same air cooled to 56° F. can only hold 5 grains of moisture. Therefore, if this air is cooled, no matter by what means, to 56° F., 3 grains of moisture must be deposited out because the air cannot hold it. Therefore, if it is desired to have air delivered to the factory containing 5

#### The Complete Serial on Refrigeration and Air Conditioning

June—Problems of refrigeration in a candy factory.

July—History and evolution of refrigeration.

Aug.—Theories of refrigeration and machinery employed.

Sept.—How to determine amount of refrigeration required.

Oct.—Air conditioning—its theories and equipment required.

Have you missed any copies?

grains of moisture, water is sprayed at such temperature that it will cool the air down to 56°, and if it leaves at that temperature from the spray chamber without any free drops of water, it will be at just the point desired.

Now, when air is saturated at a given temperature, that is, if it will hold all the moisture that it can at that temperature, it is said to be saturated or at 100 per cent relative humidity. If, however, the air saturated with 5 grains of moisture is then heated again to 70° without having contact with more moisture, the air will still contain 5 grains, although its moisture absorption capacity up to saturation at 70° F. is 8 grains. Consequently, that air is said to be five-eighths saturated or to have a relative humidity of 62 per cent.

This will explain, therefore, what is meant by saturation and relative humidity. An analogy of the sponge will possibly make this a little clearer. Let us assume that a certain sponge is the air. If that sponge at its normal size is put into a bucket of water, it will become saturated, the same as air would be at a given temperature. Now, however, if that sponge is compressed, which is the equivalent of the air being cooled, and is then plunged into the bucket under compression, it will absorb all the water it can, as before. Under those conditions, then, if the sponge is taken out of the bucket and allowed to expand, which is equivalent to reheating the air, it will be found that the sponge is no longer saturated, but damp, which means that it only contains a percentage of the water which it could hold at the size to which it has expanded. This is the case with air. So it can be seen that, although it seems like a contradiction, air can be freed of water or dehumidified by a water spray, providing always that the water spray is cold enough to do the work and of sufficient quantity to absorb the heat.

Now, then, it has been found by experience that certain departments of a candy factory re-

quired air at different temperatures and different relative humidities. It is entirely possible so to design an installation that all of the varying factors can be taken care of with a single central unit. Not only that, but there are on the market systems which are equipped with automatic means, which maintain the required temperature and the required humidity in each of the departments absolutely constant all year round, irrespective of what the weather is outside.

### The Dehumidifier and "Washed Air"

The so-called "dehumidifier" is the combination of the cooling coil in a chamber with a superimposed spray chamber before described, this chamber containing means of separating the free moisture from the dehumidified air. Also the heat is supplied for again raising the temperature of the dehumidified air, and a blower of a well-known type pulls the air through the spray chamber and distributes it in ducts to the various departments. Now, refrigeration costs a lot of money to obtain and maintain, and it would be a waste of money to throw away all this nicely regulated air once it has done its work. There is no need to do this.

All that is necessary is to install another series of ducts in the departments, collect them together and bring them back to the inlet

of the spray chamber again. There the water spray presents its second function—that of washing out of the air all of the impurities, dust, bacteria, etc., so that it is again delivered with just the right amount of moisture and temperature and perfectly clean and pure, ready to be used again both by the product and the workmen. Means are provided, of course, for introducing a certain quantity of fresh air from the outside to make up for leakage of air, etc., and this air must also first pass through the spray chamber where it is thoroughly cleansed.

With the operation of such a system it can be seen that the ideal day can be reproduced,



Hard Candy Packing Department, Showing Conditioned Air Distribution.

## DO YOU KNOW—

What an air conditioning system consists of and explain how it removes the moisture from air?

Can you define saturation or relative humidity?

Can you explain how moisture can be removed from air by means of a water spray?

What is a dehumidifier and how does it function?

Exactly what is "washed air"?

*Mr. Lissauer explains these points very clearly and comprehensively in this issue.*



and also ideal working conditions may be had. Every manufacturer today knows what it means to have healthy, cheerful workers. It not only pays dividends in a better and more uniform product, but also in the satisfaction of knowing that the best possible atmospheric conditions are provided for all the organization of the factory—a condition so necessary for the well-being and happiness of the workmen.

Let us make a survey of the typical factory, taking first the chocolate cream department.

#### **The Cream Department**

In casting the centers for chocolates, it is, of course, customary for the manufacturer to use starch trays and molds of the desired shape for the center. If the depositing machine is used for jellied goods, or very often even for marshmallows, it is necessary to put the trays then into a dry room, where the starch absorbs the moisture from the centers and then is dried by the air which is circulated in the dry room. A fairly high temperature is required and, consequently, this takes the problem out of the realm of refrigeration and air conditioning to a greater or lesser extent. The trays are then cooled and the centers removed by a Mogul machine, and the starch collected again on trays. Sometimes it is found necessary to put the starch back in the dry rooms to evaporate the excess of contained moisture and thereafter the hot, dry starch must be cooled. This takes a tremendous quantity of starch, especially when the creamed goods also are so made.

How much better it would be for the candy manufacturer to be able to cast his centers and then allow the trays to stand in the same room under such dry air conditions, even in the summer time, that the air would absorb from the starch moisture at exactly the same rate as the centers give it up to the starch; there would then be no handling to speak of, no heating and no cooling. This has actually been done in a number of plants and it has been found that the saving in starch trays, starch and labor has paid for the system in a short time. Not only are creamed centers treated in this way, but also marshmallow and gum work. This starch is used over and over again; there is no necessity for drying it out, and the product is turned out on schedule every day.

Of course, it may take a little longer to dry it out in this way, but this in most cases is not a disadvantage, as the drying continues twenty-four hours a day, while the factory ordinarily only works during the daytime. I have found that a better and more uniform product has been attained, resulting in a higher grade with less spoilage due to overheating or too rapid drying. Not only that, but with such a conditioned starch room no starch will cling to the centers, thereby spoiling the chocolate dip.

#### **The Dipping Department**

If, for instance, the centers are dipped into a solution of chocolate in an alcoholic or other

solvent, it is found, during warm weather, that the evaporation of the solvent from the dipped goods is so rapid that it cools the goods down below the saturation point of the air. A film of moisture is deposited, and the very glossy, varnished look which is the desired appearance is not obtained. This can be overcome absolutely by conditioning that type of dipping department, so that the saturation point of the air is lower than the temperature to which the goods are cooled. Thus in the summer time, the same as in the winter, there is no moistening of the film and the product is of the same high grade all seasons of the year.

#### **The Crystallizing Department**

In the crystallizing department the same thing applies. The crystals are larger, more brilliant and cleaner when the conditions of the air are regulated, if the cooling is done under the absolute control of the operator and with air which is not so dry that it evaporates the moisture too rapidly.

In the enrober department the entering end of these machines must be placed in a room which is kept at a temperature approximately that of the melted chocolate. Only the enrober operators can realize how uncomfortable this room can be, especially when the air is not only so hot but also moist. Mainly for the comfort of the operators, the air in the room should be kept dry, irrespective of the air outside of the factory.

I know of one factory which was conditioned in this way and always visitors were asked to guess the temperature in that room. Almost invariably they guessed about 70° F. They were then invited to look at the thermometers on the wall and found to their surprise that the room was maintained at 90° F. As a matter of fact, where before the enrober men were fighting to be transferred to other departments, they are now quite satisfied and are perfectly willing to work there as in other departments of the factory.

#### **Humidity Low Regardless of Temperature**

In the chocolate packing and dipping departments it has been quite customary in the trade to say that hand-dipped goods can always be distinguished from machine-dipped goods because of the difference in gloss. There are factories in this country which have conditioned air in their manufacturing departments and both hand-dipped and machine-dipped goods are brought into the same room for cooling. In these plants it is absolutely impossible for anyone but an expert to differentiate between the two.

It is a well-known fact that the dipping and packing and cooling rooms should be maintained at a temperature of 60° to 65° F. and this has been the endeavor ever since the first crude ice box cooling system was installed. However, it has only been in recent years that

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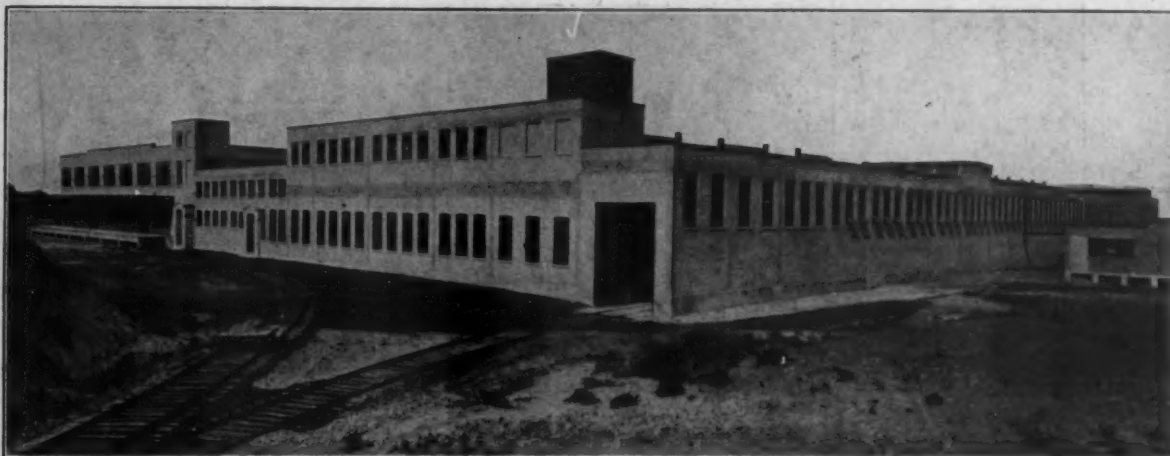
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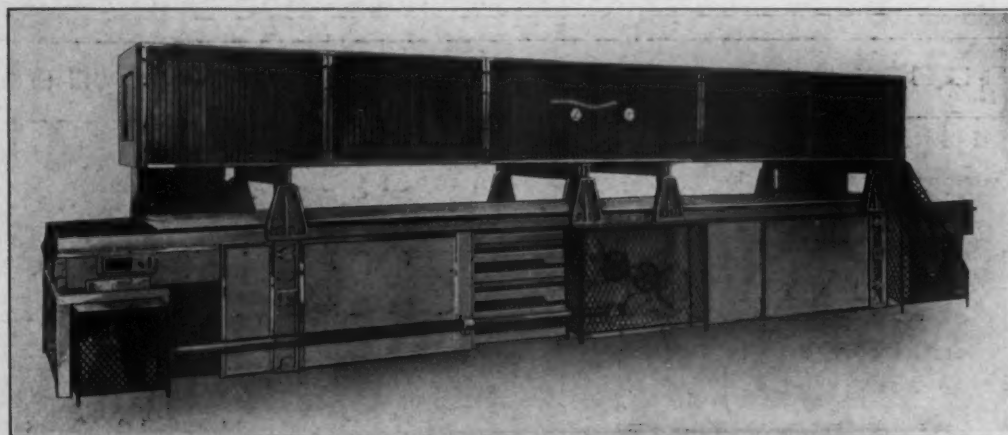
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Will assist in raising to the center of the bar the almonds or nuts which have been placed in the mould previous to the chocolate deposit. Shakes air bubbles out and gives a level uniform bar.



**THE GREER CHOCOLATE BAR AND TEN-POUND CAKE MACHINE**

Guaranteed to produce from six to eight tons per day.

We have built over this machine a Bunker Room which is scientifically insulated. It is piped for either brine or ammonia refrigeration as specified at time of ordering. To operate this machine up to maximum capacity a five-ton refrigeration machine is required for its cooling. The coils and a specially designed blower for air circulation are supplied and so placed that a uniform temperature may be maintained throughout the machine, which insures the proper setting of chocolate bar work quickly.

The bars cool and in cooling contract from the metal moulds, freeing themselves, thereby eliminating any damage to moulds by hammering or unnecessary breaking of chocolate. The machine can be equipped with a conveyor passing through a warm tunnel, returning the empty moulds from the delivery end back to the Depositor for refilling. In 25 ft. by 5½ ft. you get a travel of 110 ft., and 360 square ft. of cooling space. Built either with or without Bunker Room.

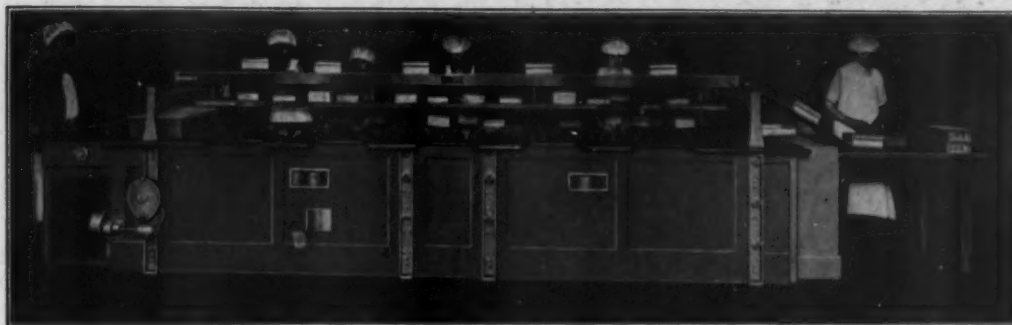
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Manufacturers of confectionery

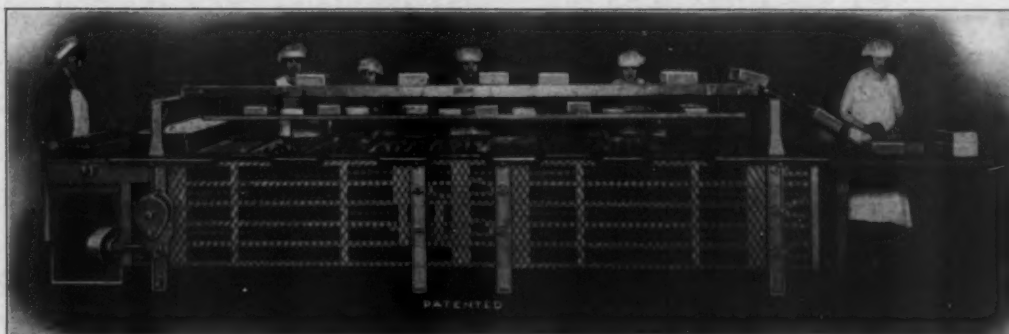


# Factory Within Your Existing Walls

## THE GREER CHOCOLATE { DRYING CONVEYING PACKING } MACHINE



THE ENCLOSED GREER AT WORK ON CHOCOLATES



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Speed up your production by utilizing a Greer.

It places before your packers 200 plaques of perfectly dry goods each hour—a steady stream of finished goods direct from your enrobers, and it sends all the empty plaques back there.

It gives a perfect gloss to your enrober goods—brings them at last right up to hand-dipped, treating each individual piece identically as it handles all the others. The uniformity of your goods is absolute.

You catch the eye of the public with goods of the Greer.

It cuts your production costs, and will take charge of any goods your enrober can produce, and saves 99 per cent of waste.

The setting of the goods is insured by the regulated speed of the conveyor. There can be no discoloring. You can pack direct into boxes. A shelf under the conveyor takes charge of your wax paper, cardboard, boxes, etc., and the filled boxes can be discharged by the upper conveyor where you want them.

Equally good for candy, biscuits or cakes.

In 16 ft. 10 in. by 3 ft. 6 in. you get a travel of 85 ft. and 252 sq. ft. of cooling space—the 60-tray size. It is made in any size, the 53-tray giving 176 plaques per hour, and the 46-tray size 153 per hour.

All sizes mentioned take about  $\frac{1}{2}$  H. P. to drive and weigh around 2,600 lbs.

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They are low in first cost. Their lightness of weight will save you money on freight costs. They are more easily packed and sealed. They keep out dirt, dust, moisture and heat. They are folded flat in your packing room for space saving storage, yet are instantly set up for filling. H & D Corrugated Fibre Shipping Boxes are by far the best containers you can buy for your fancy, bulk or specialty candies.



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## Air Conditioning

(Continued from page 34)

the effect of humidity was realized. Chocolates which are chilled at the above temperatures, but with air less than 50 per cent saturated, have a better finish, last longer and have a deeper, richer color. It has been my experience that chocolates turn gray due to being exposed to humid air, irrespective of its temperature, and this has been borne out time and again.

I have found that if the chocolates are chilled in a room with a low temperature and a low percentage of humidity, they last better; in fact, the users of low humidity systems claim that they are never troubled with gray chocolates, irrespective of the season of the year or the weather.

Furthermore, with the old system of using refrigeration without air conditioning the doors and windows have been kept hermetically sealed. As a consequence, without a flow of fresh air, by the end of the day all the workers were listless with a consequent sacrifice of quality and production.

With an air-conditioning system all of the proper temperature and moisture conditions above described are obtained and, as the system necessarily is one which introduces only fresh, washed air, the working conditions are ideal for maximum production.

### The Storage Room

After the chocolates are made they should be stored under the same conditions as obtained when they were packed. This not only insures that the wrapped and sealed packages will be filled with air with the proper conditions, but will mature the chocolates under conditions which bring out their best qualities and keep them fresh. After they go out on the market, having been subjected in this way to the proper air conditions, they must keep better than those which have been handled in a way which makes them subject to every variation in temperature and humidity throughout the process of manufacture and afterwards.

In order to prevent the chocolate, butter, etc., from becoming rancid and spoiled and to preserve the best qualities of the flavoring matters, etc., a point should be made of storing raw materials in a cold room which is maintained under proper and constant conditions of temperature and humidity regardless of seasons; otherwise the materials will absorb a certain amount of moisture or give it up, and each time this cycle is completed, a little of the flavoring matter is lost and a little more advance is made toward spoiling. Constant conditions for the entire confectionery product or any other food product from raw material to finished goods should be provided. This will make for scheduled production and uniform quality.

### Filtration System

I might say in this connection that certain bacteriological investigations I have made

point to the fact that rancidity of butter fats is due almost entirely to mold organisms. Therefore, in the storage room the air should be thoroughly filtered to remove entirely all organisms of this kind. I have seen butter made under such conditions, wrapped and kept sweet and pure from three to four months on the shelves, and I have seen butter made of the same materials but exposed to the infection of mold spores turn rancid under the same conditions in three or four days. This is proof positive that bacteriological action should be eliminated in the place where the materials are stored. Such a filtration system is an essential part of an air-conditioning installation.

### Hard Candy Department

Now, let us consider the hard candy factory. It can be taken as a general rule that hard candy is not subject to the influence of the weather conditions as long as it is kept at a temperature above the surrounding atmosphere. Under such conditions the candy has a tendency to give up moisture rather than to absorb it, as the heat which is in the candy is gradually converted into heat used for evaporation, thereby cooling the candy as well as by radiation.

As a consequence, the cooking department and the department in which the candies are manipulated in their warm state do not need any conditioning. A simple ventilation system is all that is required, no matter how warm or moist the outside air is. Certainly, however, these departments containing the hot goods should be kept entirely separate from the other departments in which the candy is cooled and further treated, so that the heat given off plays no part in the refrigeration requirements.

After the candies are cooked and are placed on cooling tables, they should ordinarily be treated with conditioned air. This is due to the fact that if the cooling tables are placed in humid air, they will absorb enough heat out of the air and produce condensation. This has the effect, of course, of working into the goods an excessive amount of moisture. Ordinarily the goods are not hard enough at that point to evaporate off this excess and the first foundation is laid for graining.

I might say that in this department such a treatment is not an absolute necessity in all cases and very often the use of a larger quantity of warmer cooling water will avoid this difficulty so that the necessity for refrigeration is practically eliminated. However, this should be made the subject of an investigation before anything is decided.

### The Cooling Tunnel

Where the hard candies in such form as cough-drops, etc., are passed through cooling tunnels, these tunnels should most certainly be cooled with air which is not saturated and in every case the air should be carried counter-current to the flow of the material. In other

words, the coldest air should come in contact with the coldest material and, so progressing, the warmest air should leave at the feed end, so that the goods will be tempered as well as cooled.

Nearly saturated air cannot be employed for this purpose because the goods, when they are first in contact with the air, are cool and would absorb moisture if it were present.

In some cases a tremendous volume of dust is created in shakers, etc., where these are used to separate the cough-drops and similar material from the surrounding web. If this dust is allowed to come in contact with the outside air during the humid days of the summer, it will absorb more than its weight in water and will resolve itself into a sticky mass, covering everything. I have had cases where this gummy or gluey substance got into the bearings of machines and hardened there, so that the manufacturer had to shut down at once, dismantle his machines and chop out the candy with a cold chisel. Air conditioning will relieve this situation because the dry air will prohibit the absorption of moisture by the dust, so that it can be removed with a broom or a vacuum cleaner before it has any chance to settle.

#### **The Packing Department**

In the hard candy packing department it is necessary to have air at a low humidity because the goods are at the room temperature when they enter and are in condition to reabsorb moisture. In this department a temperature of from 75° to 80° can very easily be used. This eliminates the need for a very large refrigerating installation, as the heat inflow through the walls, glass and roof is at a minimum. The air, however, should be very dry and under these conditions there is no danger whatsoever of the candies absorbing moisture. This prevents the crystallization phenomenon which is known as graining. The goods stay glossy and have a high polished finish, which is the goal towards which all good hard candy manufacturers aim. Also in case automatic machines are used to pack this candy, the dry air conditions will eliminate trouble from dust, which also under moist air conditions has a tendency to interfere with the action of the machinery.

After the goods are packed, except in cases where they are put in glass, they should be stored in a room which is kept under almost exactly the same conditions as the packing room. There they are tempered and in some cases further cooled, so that a very highly polished, hardened surface which resists the action of the moisture surrounding the dealer's shelves can be obtained. More than one manufacturer has told me that before he installed an air-conditioning system and was absolutely at the mercy of the weather, he was worried from the time the first summer shipment was made until the fall, as the number of returned goods

was excessive. After the installation of the system, they have all been unanimous in stating that they have practically no more trouble with returns due to graining in the summer than in the winter. No better argument for such a system can be mentioned.

#### **VII**

#### **Conclusion and Summary of the Advantages to Be Derived From the Use of Refrigeration**

It may seem from the above that I am talking of the air-conditioning system as a cure-all. It is, of course, nothing like that, as the other three factors mentioned in the beginning of this article have as important a bearing. However, every manufacturer has by hard experience determined on standardization for the other factors. This one adds the last, and possibly one of the most important, so as to make the manufacturer absolutely certain that when he starts a batch he will finish on time and with the quality he desires, no matter in what season of the year it is made.

In summing up all that has gone before, I must repeat what I have said many times previously, that is, that refrigeration, especially in its highest form of development, that of air conditioning, is not a cure-all, but is in all its forms an ally of the candy maker in his endeavor for maximum production of standard quality. It is as impossible to make good candy with refrigeration but without good materials and workmen as it would be to make good candy with good materials and workmen and without refrigeration in the summer time. All the factors work hand in hand and the wise manufacturer will take advantage of the good which refrigeration can do for him. It is practically impossible to estimate the saving made when a manufacturer can operate his plant every day for twelve months in the year. I know of some plants which had to shut down three months a year because of adverse weather conditions. They were large manufacturers, and the fact that they could, with the aid of refrigeration, run continuously more than paid for the initial investment the first year. The best way to determine how much good refrigeration will do is for each manufacturer to estimate for himself the additional business he could get in the months that he is now shut down, or only working when the weather permits, and add the value of satisfied customers due to deliveries on time and to uniform quality, and the gain due to the prestige that only prompt and perfect service can give. In every case the balance will be in favor of an investment for refrigeration.

In selecting the type of equipment desired, I cannot emphasize too strongly that, although the candy manufacturer may be an expert in his line of work, that does not say that he is an expert in every line. To get the maximum results and the maximum production at the low-

*(Continued on page 56)*

## Is Candy Ever Poisonous?

(Continued from page 24)

ally poisonous, or at least would be harmful if taken in large amounts. For this reason there have been selected by the government a few standard colors which have proved to be absolutely harmless, and they are the only ones permitted to be used in food materials, including candy. Colors in candy are added to please the eye and sometimes are added in larger amounts than is necessary. When ill effects are felt after eating candy which has been very highly colored the trouble is not infrequently laid to the coloring matter, but the writer is not aware that there has been a single case where the color has actually been shown to have had any deleterious effect; in fact, it would be possible to eat enough coloring matter to color one hundred pounds of candy without the slightest ill effect. At the same time over-coloring should be avoided because of the possible psychological effect.

Candy is a food material of the same nature as sugar and corn syrup, which are the chief ingredients and are most wholesome. Other food materials like chocolate, nuts, small amounts of gelatine, etc., are also wholesome and non-poisonous. Like any other food material there may be ill effects from over-indulgence in candy, not because of the food, but because of too much food. When gastric disturbances occurs it may so effect the person that symptoms suggesting poison manifests themselves, then the conclusion is hastily reached that actual poisoning has taken place and some food material recently eaten is singled out as the cause of the trouble. It is not probable that candy is in itself ever poisonous, unless as above mentioned, poisonous ingredients have been added with murderous intent, and such cases are very rare and cannot be attributed to candy itself.

## What's New

Macy's factory has moved to their new location at 418-426 Eleventh Ave., New York City.

A new corporation has been organized in Syracuse, N. Y., called the Confectioners Products Corporation. They are manufacturing the Aerial Spun, Super-Quality Chocolate Chips, heretofore made by Magruder-Wood Chocolate Company; also a line of Rosebud Chocolate Drops, penny goods and bar goods.

McKusick, Towle & Company's five story structure was destroyed by fire last month. The damage is estimated at \$140,000, of which \$80,000 was stock and \$60,000 on the building. A temporary location has been obtained and plans for a new building are under way.

**1923 N. C. A. Convention will be held in Atlantic City on May 23rd, 24th and 25th**

## More About Corn Syrup

(Continued from page 29)

sugar, simply withholding one molecule of water.

Curiously enough, in the *digestion of cane sugar*, nature simply adds the molecule of water which is absent and converts the product thereby into dextrose glucose.

The digestion of starch is much the same, being by the action of the saliva and other principals in the fluids of digestion, changed first into dextrine, then into maltose, and then into dextrose-glucose, emphasized by the influence of the hydrochloric acid in the stomach and the heat of the body.

Please note that the composition of corn syrup is dextrine, maltose and dextrose. The process of manufacture, as has been suggested, converts the starch into the same sugars and along the same stages, under the influence of moisture, heat and one-tenth of one per cent of hydrochloric acid, *as in the process of digestion*.

It may be said here that dextrine formed in the change in the process of converting starch into sugar, is not really a sugar—nevertheless, the starch having absorbed a certain amount of water under the influence of heat in the process, both in the digestion and in the manufacture, is slightly sweet.

An example of this is in the baking of bread, the crust being practically dextrine, and when taken into the mouth it will be noticed it has a slight sweetness.

### A Summary

Corn syrup not only prevents crystallization of the sugar in candy, but promotes its digestibility.

In other words, candy containing corn syrup is more wholesome than that which is made without this important food, because it is already partly digested and this means much to the feeble digestion of the aged and to children.

### New "Slogan" Seals

The Milwaukee Label & Seal Company of Milwaukee are distributing some very attractive seals embossed with the official slogan, "Everybody Likes Candy." A million of these seals have been printed to be distributed free of charge to manufacturing confectioners for use on their letterheads, envelopes, etc. Their announcements state that a box of 1,000 seals will be sent to any candy manufacturer gratis upon request.

Benjamin Dangerfield, for five years president of Reymer & Bros., Inc., passed away September 11th.

W. H. Weatherly & Company, candy manufacturers of Elizabeth, N. C., have completed a new three-story warehouse. This building represents an investment of \$75,000.



# VI—Dietary Value and Physiological Action



## The sixth of a series of seven articles on **Edible Gelatin**

by **Robert H. Bogue, Ph. D.**

*Of the Mellon Institute of Industrial Research, Pittsburgh, Pa., Research Chemist for Armour and Company, of Chicago, Ill.*

Exclusively for **The Candy Manufacturer**

**I**N the minds of some people, especially the general public, there exists a prejudice against the use of gelatin in foods on account of the unrefined

relationship which they think that it bears to glue and to what they believe to be the source of the product. A number of years ago when inferior gelatins were more common than the better grades there may have been reason for such a prejudice, and even today very occasionally products are encountered that are inferior due to their content of low grade material. But that should not be made to reflect against the large number of altogether satisfactory food gelatins that are now available.

There is also a popular idea that gelatin is not a food, but this is entirely contrary to the facts. The role of gelatin in animal economy has been studied by a number of able physiologists, and in the light of their findings there is no question of the value of gelatin in the dietary. We are not, however, permitted to regard gelatin as the equivalent, in the sparing of protein tissue in the body, of the *combined proteins*, such as are found in milk, meat, eggs, etc.

### **The Protein Value of Gelatin**

That it functions as a *true food* is proven, but it is not a *complete food*. It appears to be incapable of supplying more than about a third to a half of the required nitrogenous matter

necessary to maintain a nitrogen equilibrium in the body. A few illustrations will make clear exactly what this means. One investigator has reported that if gelatin is included in the diet

to the extent of 12 per cent of the required energy, the decomposition of body protein, or the requirement of other proteins necessary for equilibrium is lessened by 27 per cent, but further increases in the administered gelatin failed to diminish the protein broken down proportionately. For example, gelatin to the extent of 62 per cent diminished the protein decomposition by only 35 per cent. This was the maximum obtained. Up to 12 per cent practically all of the gelatin was absorbed, traces only being found in the faeces.

The protein decomposition in dogs during gelatin feeding has been found to

be 62.6 per cent of that which is broken down during inanition. In the average man the amount of protein which is broken down from body tissue in a day is 70 grams. If gelatin is given to the extent of its maximum effect, assuming the same relationship for man as for dogs, 33 grams of gelatin will reduce this broken down protein to 56 grams, or 33 grams of gelatin will spare 14 grams of protein. The heat value of gelatin is 5.3676 calories, and upon deducting the value of the unburned products in the urine and faeces it leaves 3.8835 calories or 72 per cent of the total energy available. The available energy in meat protein is

### **Dr. Bogue's Complete Serial on Edible Gelatin**

MAY:  
Raw Materials and Manufacture  
JUNE:  
Constitution and Properties  
JULY:  
Testing and Grading  
AUGUST:  
Chemical and Bacteriological Action  
SEPTEMBER:  
Buying and Handling  
OCTOBER:  
Dietary Value and Physiological Action  
NOVEMBER:  
Importance in Food Products

This series will be supplemented by articles from candy superintendents on the practical handling of gelatin in candy making.

Shall we enter an extra subscription sent to your home address where these instructive articles can be studied at your leisure?—Editor.



## Remember These Facts About Gelatin

- 1—Gelatin is a true food, but not a complete food.
- 2—Gelatin supplies one-third to one-half the required necessary nitrogenous matter for a healthy body.
- 3—Gelatin is a preserver of nitrogen, easily digested, and readily converted into energy.
- 4—The heat value of gelatin protein is within 29 per cent as much as meat protein.
- 5—Gelatin is a protective colloid and an emulsifying agent and as such performs a valuable function in the dietary. The addition of gelatin to milk in cases of malnutrition has proven to be very beneficial.

about 74.9 per cent, which is but little greater than that found for gelatin.

Other investigators have observed that protein nitrogen might be replaced by gelatin up to a half of the starvation requirement, while as much as two-thirds may be replaced provided carbohydrates are present in such amounts as to provide a half to two-thirds of the total calorific requirement.

### Why Gelatin Cannot Completely Replace Other Proteins

Some effort has been directed at an explanation as to why gelatin could not be substituted completely for other types of protein in animal economy, and the conclusions of these studies indicate that its failure in this respect lies in the absence of certain specific and necessary amino acid residues. Thus tyrosine, cystine and tryptophane are practically absent in gelatin, and Professor Sherman of Columbia University has come to the belief that although the absence of glycine from the products of hydrolysis of a protein was of no significance as regards its nutritive value, yet the absence of more complex radicals such as tryptophane, tyrosine, etc., seriously affected its ability to completely replace katabolized body protein.

It is probable that any carbohydrate which is not needed for satisfying the energy requirement is much more efficacious in reducing the nitrogen output than that which is necessary for combustion. The sparing action of gelatin is not due to any dextrose that it may give rise to, but to its content of nitrogenous residues. Glycine, which is the chief amino acid constituent of gelatin, can be retained temporarily in the body, and so may serve to account for the high replacement of other proteins by gelatin. Glycine is not retained permanently, however, even in the presence of an abundance of carbohydrate.

Many other contributions have appeared upon this subject and in every case the conclusions point to the insufficiency of gelatin as a *complete* protein food. But many other pure proteins, such as albumin, fibrin, etc., are also incomplete, and it should be emphasized that in a normal diet, where a great variety of ingredients go to make up the dietary, the need for a

complete food being embodied in any one material is quite negative and a matter of indifference. As one of a variety, however, there can be no reasonable objection raised to the inclusion of a pure gelatin, for it is a true food, a preserver of nitrogen, is easily digested, and is readily burned in the production of energy. The additional value of gelatin in the diet as a protective colloid is probably, however, of even greater importance.

### Other Colloids

Many colloidal substances and most suspensions are readily precipitated from solution by the addition of electrolytes. This is especially true of the suspensoid type of colloid such as the colloidal metals, sulphides, oxides, etc., but some proteins are similarly affected. For example, the casein of cow's milk is coagulated as soon as the bacterium *lactis acidi* has produced a certain small amount of lactic acid, or by the direct addition of a very little mineral or organic acid. There are some colloids, however, that are not only practically uninfluenced by the addition of electrolytes, but that possess the striking and important property of being able to *stabilize* colloids that are normally easily precipitated, so that a very much greater concentration of electrolytes is required to bring about a coagulation. Exceedingly small amounts of these colloids are able to protect very large volumes of otherwise unstable material.

When the casein of milk is separated from the other constituents it is found very difficult to bring it into a state of colloidal solution, for even traces of electrolytes suffice to precipitate it. An examination of the whole milk shows that it contains:

In True Solution	In Colloid Solution	In Suspension
Lactose	Casein	Milk fat
Mineral salts	Lactalbumin	

and the proportion of these constituents is found to vary in different animals. The stability of the milk and its resistance to the action of acids is found to be proportional to the content of lactalbumin, as shown in the following table:

(Continued on page 48)



## THE SHIPPING DEPARTMENT

# II—Proper Assembling of Boxes

by C. V. Hodges

National Association of Box Manufacturers

### The second of a series of articles on the general subject of Eliminating Damage from Shipping

*This is a subject which embraces not only the matter of containers and their reinforcement, but also the method of packing, handling, storing and receiving. We will appreciate any information, suggestions and reports of experiences of manufacturers in our industry which will contribute to the interest and practical value of this and other feature departments of THE CANDY MANUFACTURER.—EDITOR.*

**T**HE purchase of properly designed shipping boxes as outlined in last month's article is of but little more importance than the efficient assembling of those boxes in the manufacturer's own shipping department. The various parts of the box may be properly designed and of the correct thicknesses of material for ends, sides, top and bottom so that the whole may be termed a balanced box. However, unless the box is properly nailed the whole purpose of scientific design is of no avail. Therefore, exhaustive laboratory tests have been made, the results of which clearly point out nailing methods which will insure a maximum carrying strength in a properly designed box.

#### Laboratory Tests of Wood Boxes

The laboratory tests which have developed a wood box to its maximum efficiency have been of various natures, each particular piece of testing apparatus having been designed to simulate the actual hazards of shipping in some definite way. For example, at the Forest Products Laboratory at Madison, Wis., where the majority by far of laboratory work has been carried on, there is a huge fourteen-foot hexagonal tumbling drum weighing approximately twenty-seven tons. On the six inside faces of this drum are arranged various obstacles and hazards so that when the drum revolves the box being tested falls, slides and drops in such a manner that all sides and edges of the box are at one time or another on a striking edge as the box falls. In this way the shocks, smashes and other features of rough handling in actual transportation conditions are duplicated. In this particular test the box is usually loaded with the actual contents which are to be shipped or a substitute of

approximately the same weight and physical shape.

Other tests are the compression tests which are illustrated here. These tests apply pressure on ends, opposite edges or diagonal corners. These compression tests clearly indicate the ability of a box to resist being collapsed in this particular manner by severe weights in storage or various shocks in transit. This provides an excellent additional method of comparing the strength of containers of different design and different nailing.

In addition to these tumbling and compressive tests there are also drop tests in which the box is dropped from a given height so that it falls on either corners or edges.

The data and statistics which are compiled from the results of these exhaustive tests definitely indicate the proper size, type and spacing of nails as well as the proper thicknesses and balancing of the parts of the box.

#### The Science of Proper Nailing

In the schedule of nail-holding power given in the preceding article of this series it will be found that there is clearly revealed a definite relationship between the specific gravity or density of various woods and the resistance to withdrawal of nails driven into that wood. It is a general rule that the strength properties of woods increase with their weights. However, the greater the density of the wood the greater splitting force a nail exerts. In a measure these two statements neutralize each other, but results indicate that a dense, heavy wood will split somewhat more than the lighter wood under the same nailing.

Manufacturers, to insure the undamaged delivery of their shipments, should pay considerable attention to proper nailing methods in their shipping departments. Economies are

not only effected in this way, but the general economic loss due to damaged shipments, as well as great individual losses on the part of the shippers themselves, will be greatly lessened and in a measure eliminated.

In the construction and assembling of boxes nailing is considerably more important than is often realized. Tests have shown that in a large proportion of failures the responsibility was due more to the nails than to the wood. These failures in nailing may be due to one of a number of causes; the nails not sufficiently large for the thickness and nature of the wood; the wood not properly seasoned; the nails not properly driven and not properly placed and spaced.

The securing of properly seasoned wood has been outlined in the preceding article.

If you are buying your boxes in nailed-up form, that is, already assembled, all that is left is proper packing and nailing the top to the box. In connection with nailing, I shall take that question up shortly.

If your boxes are being purchased in shook form, that is, the lumber merely cut to size, to be assembled in your own shipping department, it is necessary that the nailing together of the parts be done properly in order that maximum carrying strength may be obtained.

It is a general rule, definitely established by conclusive laboratory tests, that with seven nails per nailing edge as a basis and taken as 100 per cent, the addition of one nail per nailing edge increases the amount of rough handling required to cause loss of contents 45 per cent; in other words, by the addition of one nail per nailing edge 45 per cent more protection is realized, and by reducing the number of



An obstacle race for shipping containers. Inside of a huge 27-ton drum tester.

nails to six rather than seven a loss of 25 per cent in serviceability is suffered; so you see the rule operates that by placing nails closer together more holding power is afforded per inch of nailing edge for the wood in which the points are held unless the nails become so close that the holding power is reduced by splitting of the wood.

To aid you to determine the size of nails to be used in assembling your boxes, the various woods that are used in the nailing of boxes have been grouped as follows:

#### GROUP I

White pine	Balsam fir	White fir
Norway pine	Chestnut	Cedar
Aspen (popple)	Sugar pine	Redwood
Spruce	Cypress	Butternut
Western (yellow) pine	Basswood	Cucumber
Cottonwood	Willow	Alpine fir
Yellow poplar	Noble fir	Lodgepole pine
	Magnolia	Jack pine
	Buckeye	

#### GROUP II

Southern yellow pine	Hemlock	Larch (tamarack)
	N. C. pine	
	Douglas fir	

#### GROUP III

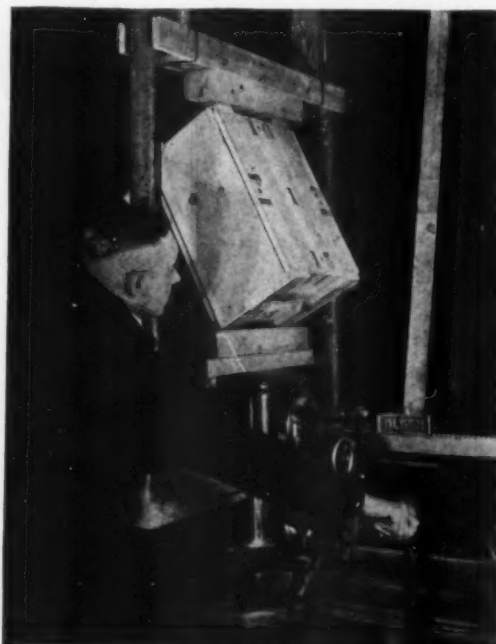
White elm	Pumpkin ash	Tupelo
Red gum	Black ash	Maple, soft or silver
Sycamore	Black gum	

#### GROUP IV

Hard maple	Hackberry	White ash
Beech	Birch	Hickory
Oak	Rock elm	

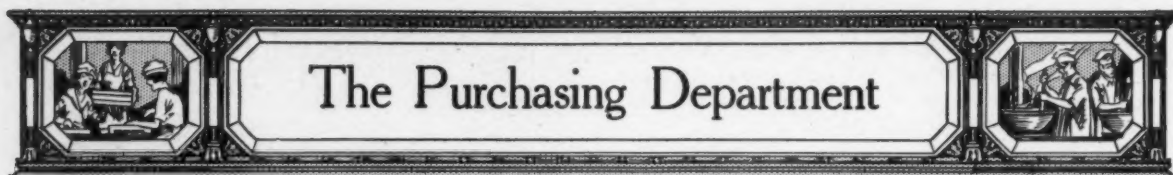
The following nailing schedule is based on this grouping of woods. You will note that this

(Continued on page 52)



Ready for a Compression-on-edge Test.





## The Purchasing Department

The list of specifications of about 150 raw materials which was scheduled for this issue will appear in November issue; it will be the second installment of a series of five articles on "Purchasing Candy Factory Supplies."

# Purchasing Department Records

by E. J. Smith

Formerly Purchasing Agent, Bunte Brothers

**I**N more highly developed forms of material-recording systems all records are kept by the storekeeper's clerk or a clerk in the Purchasing Department either on a card system or on a loose-leaf ledger. Such a ledger has columns ruled to suit the particular needs of the department and is commonly called a Stock Ledger. The term stock, as before noted, refers more properly to finished product. The name Stores Ledger is more accurate when referring to raw material and will be used in this article though it does not conform to common usage. A typical page from such a record is shown on this page.

The record of only one item is carried on each page and this record, it will be noted, includes not only all receipts and issues of material recorded, but also all orders for new material and a record of any material on hand that has been assigned to work in process of manufacture. When a requisition from the factory, form of which is shown in Fig. II, is filled from the stores, it is cancelled and sent to the clerk keeping the stores record and no

record is necessary at the bin or rack. These cancelled requisitions in connection with the verified invoices of new goods give complete information regarding the condition of the material and if properly handled the Stores Ledger is a perpetual inventory of all material on hand.

It is obvious that if this record is to be accurate the stock room must be closed to all except certain persons of proper authority. No material should be delivered except by proper requisition and any difference between bin and stores ledger should be investigated and accounted for. Provision is usually made in the stores ledger sheets for noting the price per pound or price and the total valuation, both for the purpose of inventory and for the purpose of correctly fixing the value of all goods issued from the stores.

The function of stores ledger is somewhat broader than simply to serve as a means of keeping track of material. If properly kept it enables the Purchasing Agent to carry the minimum amount of material and consequently

### STORES LEDGER

MAXIMUM 1500 bbls.

MINIMUM 500 bbls.

MATERIAL SPECIFICATION Fine Granulated Sugar

BUILDING N02

DIVISION NORTH

SECTION A

SHELF \_\_\_\_\_

BIN \_\_\_\_\_

PURCHASED FROM	ORDERED			ASSIGNED	BALANCE AVAILABLE	INVOICE						ISSUES				IN STORES	
	DATE	REG. NO.	QUANTITY			DATE	INVOICE NO.	REG. NO.	QUANTITY	TOTAL REC'D	PRICE	COST	DATE	PRODUCT ORDER	DEPT	QUANTITY	VALUE
American SRCo	7-1	1271	1000bbls	527	1000bbls	8-10	3241	1271	1000bbls	1000bbls	6.25	1875 00	8-17	6213	Cream	10bbls	1875 00
						8-12	4632	1271	1000bbls	1000bbls	6.25	1875 00	8-19	8501	Choco	10bbls	1875 00
						8-14	5131	1271	1000bbls								180bbls 3375 00



keep down the investment of his employers to the lowest economical point.

Several entries are shown in Fig. I and taking them step by step it can be easily understood. For instance: We are shown the amount of 1,500 barrels of fine granulated sugar as a maximum quantity to have on hand at any one time. We have also shown a quantity of 500 barrels as a minimum amount and when this figure is reached, it is a signal to place further orders.

In the left hand column, the name of the shipper is written and under the heading of "Ordered" we show the date ordered, our requisition number and quantity ordered. Under the heading shown as "Assigned" we have 100 barrels reserved for an order on the books but not yet manufactured. We are reserving this amount for this particular order. Subtracting the 100 barrels assigned from the total amount ordered leaves a balance available of 900 barrels. In the invoice columns a shipment has been made on August 10th which has arrived. In the issue's columns we have drawn against this shipment to the extent of ten barrels on August 17th, leaving a balance of 90 barrels in stores. On August 12th another shipment of 100 barrels has been made which also has arrived, increasing our balance in stores to 190 barrels. On August 19th, we show another withdrawal of ten barrels, changing our balance in stores to 180 barrels. On August 14th another shipment of 100 barrels has been made which is still in transit.

A stores analysis, as reproduced below, when carefully kept, is a means of accurately telling at a glance just how much of any material is being used and also it is essential as a matter of record when making further purchases. A

DEPARTMENT <u>Chocolate</u>		PRODUCTION NUMBER <u>6713</u>
<b>STORES REQUISITION -</b>		
Please deliver the following -		
QUANTITY	DESCRIPTION	
4 bags 2 bbs 1 case	Granulated Sugar Corn Syrup Walnuts	
APPROVED <u>H. Jones</u> Foreman		

separate analysis should be made up each day and kept together with previous analysis in a binder in the Purchasing Department where it can be quickly consulted by the buyer. The clerk keeping the above analysis should receive the stores requisition from the stores clerk after he or she has posted same in the stores ledger. The stores analysis sheet should have as many columns as there are important raw materials used in the factory.

At the bottom of the form below is shown total withdrawals of the day, directly above previous withdrawals of the month. The total of both of these show the total withdrawals for the month up to and including today's. The total withdrawals for the year are taken from yesterday's sheet and added to the total withdrawals of today, making a total of the year's withdrawals to date.

The foregoing records will help to prevent losses due to carelessness if properly kept and are as necessary in a business of today as a cash book, though curiously enough it is difficult to convince many manufacturers that this is a fact.

STORES ANALYSIS																
of Withdrawals																
DEPARTMENT	SUGAR BBL'S	SUGAR BAGS	CORN SYRUP	Moulding Starch	Cooking Starch	Coconut	Walnuts	Almonds	Filberts	Cocoa Butter	Gum Arabic	Peanuts	Egg Albumen	Chocolate Coating	Milk	Gelatin
MARSHMALLOE	5	2	6	10		2	1				1		1	7		2
CHOCOLATE	3	4	4				1		1	2				2	1	1
HARD GOODS	7	7	10					2								
CREAM ROOM	3	1	3		2								1		2	
TOTAL TODAY	18	14	23	10	2	2	2	2	1	2	1		2	3	2	1
PREVIOUSLY REPORTED THIS MONTH	50	60	60	40	10	12	14	12	8	10	9	20	11	15	14	6
TOTAL MONTH TO DATE	68	74	83	50	12	14	16	14	9	12	10	20	13	18	17	7
TOTAL FOR YEAR TO DATE	413	482	470	322	85	97	110	94	67	83	79	273	91	105	117	51

# When Is an Article *Expensive?*



WHEN you went to the Chicago Convention last May, perhaps you bought a new traveling bag. You used it for *that* trip, *three* times during the winter, and *once* this summer when you went on your vacation. You paid Fifteen Dollars for it. Now it is *shabby* and you need a *new* one. When you bought that bag the clerk wanted to sell you a Thirty Dollar bag, but you turned it down as *too expensive*. But, if you *had* bought it, and *now* found it to be *as good as new*, with *five trips* behind it—then the Thirty Dollar bag would have been *cheaper* than the Fifteen Dollar bag.

The same *common sense* applies to the purchase of all materials. If you buy an *inexpensive* gelatine and have to use a *considerable* quantity of it because of *lack of strength*, and have to *discard* some of it because it does not run *uniform*, it is *more expensive* than the *higher priced* gelatine, a *little* of which gives you the *body and texture* you want while all of it can be used because of *uniformity*. Your *cost sheets* (after a test) will prove to you (as cost sheets are proving every day to hundreds of confectionery manufacturers) that Essex Gelatine is the "*less expensive*" gelatine.

A shipment can be made to you at once from the warehouse nearest to you—Boston, New York, Philadelphia, Chicago, St. Louis, San Francisco.

## Essex Gelatine Company

Manufacturers

40 North Market Street  
BOSTON, MASS.

## Edible Gelatin

(Continued from page 43)

### Composition of Milk from Different Sources

Kind of Milk	Casein	Lactalbumin	Fat	Sugar	Behavior with Acids and Rennin
Cow . . . .	3.02	0.53	3.64	4.88	Readily coagulated
Woman . . .	1.03	1.26	3.78	6.21	Not readily coagulated
Goat . . . .	3.20	1.09	4.78	4.46	
Ewe . . . .	4.97	1.55	6.86	4.91	
Mare . . . .	1.24	0.75	1.21	5.67	
Ass . . . .	0.67	1.55	1.64	5.99	Not readily coagulated

The order of digestibility also corresponds with the content of lactalbumin, and ass's milk, which is richest in this protein, may often be fed with success to infants who are unable to digest either cow's or woman's milk. Goat's milk is also shown to be superior to cow's milk in this respect. The specific action of the lactalbumin is obviously as a stabilizing agent which keeps the casein in a finely divided state, and prevents a coagulation of the latter even upon reaching the stomach with its acid secretions. The ultra-microscope has revealed that the size of the casein particles is much smaller in woman's than in cow's milk.

### Gelatin a Protective Colloid

It also has been shown that curdling of cow's milk has been almost entirely prevented upon the addition of small amounts of acid if a little gelatin is previously added. This experiment makes it appear certain that gelatin is capable of functioning as a protective colloid, in conjunction with lactalbumin, in preventing coagulation of milk during digestion. The addition of gelatin or gum arabic to cow's milk for infant feeding was advocated as early as 1889 and, although the exact nature of the action was not then understood, the beneficial results obtained by such practice were well known. It is very probable also that gelatin functions in keeping the fat in a finely divided condition. When casein is precipitated it carries down with it a considerable portion of the fat, and troubles that have been experienced by an appearance of indigested fat may be due in part to fat precipitation by the casein.

It must be urged that gelatin will not in all cases entirely prevent the formation of casein curds in the stomach. The acidity may become sufficiently high to produce coagulation in spite of the protective colloids present, but these undoubtedly are of value in retarding and diminishing this undesirable phenomenon. In fact, the size of the flake produced, rather than the entire absence of any curd, is probably the more important aspect clinically, for if the curd is finely divided and soft the enzymes of the digestive tract will be easily able to dissolve them, whereas if large, hard lumps are formed the enzymes may have but little effect upon them. The equilibrium between the acid contents of the infant's stomach and the protective colloid content of woman's milk is such that coagulation takes place late, and in small, soft masses, while upon the ingestion of cow's milk coagulation occurs early, and in large masses.

The addition of gelatin to the milk in cases of serious malnutrition has been found repeatedly to be highly beneficial, and to result in a much greater absorption of the milk fed. The milk fat tends in such cases to coalesce into relatively large masses which are quite impossible of digestion in the infant organism, and the amount of fat fed is often reduced to less than two per cent without greatly improving the case, while any successful attempt at preventing the coagulation of the casein is simultaneously reflected by a perfect digestion of the fat. Similarly in adults the ingestion of protective colloids in the form of albumins and gelatin is of the highest importance in maintaining an emulsion of the fats which are ingested, and in that way preventing digestive disorders that would result from the non-emulsification of fat masses.

Although investigations upon this subject have been largely confined to the single food milk and to its adaptability for infant feeding, the principle of colloidal protection must be of none the less great importance in many other foods, and in the normal dietary, as well as in that of the sick room and the preparation of food for infants and invalids. This important phase of dietetics has not been adequately investigated, but there can be no doubt, in the light of what has already been accomplished, that the chemical constitution of a food is only one of a number of the factors which must properly be considered in the selection of a dietary.

If the nitrogen supply is given wholly through the single protein albumin, or fibrin, or gelatin, the unfortunate victim will starve to death. If a perfectly balanced ration of heat-sterilized foods is given, the same misfortune will result. We have discovered that a single pure protein is usually insufficient. We have discovered the hypothetical vitamins. We have observed that a certain association of foods may react in the body quite differently than a certain other association. And in this field lies the influence of the protective colloid. The value of this substance as a part of the normal diet, especially to those who suffer from poor digestion, is probably far more as a protective colloid and emulsifying agent than as a food, but it functions unquestionably as both.

A. W. Hutton, formerly in charge of the box making department of the A. M. Collings Mfg. Co. of Philadelphia, has organized a company under the name of the A. W. Hutton Mfg. Co., located in the Randolph Jefferson Building, Philadelphia. The A. W. Hutton Mfg. Co. have taken over the box business of the A. M. Collins Manufacturing Company, who have discontinued their box department.



## Seeing's Believing!



"Purest  
and Best—It  
Stands the Test"

### One glance at *this* Gelatine tells the story

It is a long story, beginning years ago—a story of scrupulous care in the choice of raw material, constant research and work in perfecting the Atlantic process, sacrificing some profit to greater satisfaction, and, finally, the ultimate achievement—

## ATLANTIC —the super-clarified— GELATINE

Grade for grade, Atlantic costs less and does more than ordinary gelatines. That's economy. It passes the pure food requirements of every state in the Union, bar none. That's convenience. It's the best gelatine you can buy. That's truth.

### A Card Will Bring a Barrel

On request, we will send you a barrel of Atlantic. Use five, ten or even fifteen pounds. Make a fair, careful test. If Atlantic doesn't prove to be what we claim, return the unused portion and we'll pay the freight both ways. Furthermore, the gelatine you've used will not be billed for.

### ATLANTIC GELATINE COMPANY Woburn, Massachusetts

#### WRITE HOME OFFICE

Or one of the following branches, if nearer to you

#### BRANCHES

NEW YORK CITY Room 1081 Woolworth Bldg.	BALTIMORE Room 1012 Union Trust Bldg.	CHICAGO Suite 510 118 N. La Salle St.
SAN FRANCISCO Room 240 Hansford Block, 268 Market St.		



We have added several new pieces to our line of

## Peter's Superlative Milk Chocolate Coatings

These new milks make possible a little wider selection in color, grade and price. Like all of our coatings, they are genuinely fine chocolate.

The consumption by the public of candy made with FINE MILK coatings is rapidly increasing. We are the natural source of supply for milk chocolate. Daniel Peter invented it and the Peter factories have been distinctly pre-eminent in this particular field for over fifty years.

Samples and prices submitted upon request.



**Peter Cailler Kohler  
Swiss Chocolates Co.**

Incorporated

131 Hudson Street  
NEW YORK, N. Y.

### Factories:

Fulton, New York, U. S. A.  
Hayes, England. Broc, Switzerland.  
London, England. Hochdorf, Switzerland.  
Orbe, Switzerland. Pontenlier, France.

## Cacao Products

(Continued from page 27)

Louis XIV, the use of chocolate having become almost universal in France, and the first crop of cacao beans having arrived from the French colony of Martinique, the monopoly was ended, and the privilege of manufacturing and selling chocolate was extended to all confectioners and grocers.

While absolutely authentic information is not available, it appears that in both England and Germany, the use of chocolate was in vogue about 1650, for chocolate houses very similar to the famous coffee houses were quite popular in both countries.

The first chocolate produced in Europe was very expensive, owing to the small supply of cacao beans on hand among individuals, due to the high prices obtained by Spain for the beans, of which she was at that time the sole importer. These extremely high prices proved for a long time to be a serious obstacle to the general use of chocolate among the masses.

The successful cultivation of cacao in the Philippines by the Spaniards about 1680, improvements in means of transportation, the increasing activity and enterprise of planters and manufacturers and the discovery and development of other sources of supply in South America, Jamaica, Africa and other regions, soon lowered the cost of the finished product, until today it is a staple article of diet among even the very poor. Chocolate is today the most universally popular of all confections, and cocoa, with the single exception of milk, is the most generally used food beverage.

In this series of articles we are tempted to offer a few figures to give the reader a grasp of the magnitude of the modern cacao industry. The tables are from the files of the Bureau of Foreign and Domestic Commerce of the U. S. Department of Commerce.

### PRODUCTION OF CACAO PRODUCTS

Country	Production in Metric Tons	
	1914	1915
Gold Coast Africa.....	54,144	76,022
Brazil .....	40,315	46,260
Ecuador .....	42,333	32,834
San Thome .....	31,379	29,598
San Domingo .....	20,611	23,389
Trinidad .....	29,007	21,808
Venezuela .....	12,700	12,250
Grenada .....	6,005	7,363
Jamaica .....	3,646	3,405
Haiti .....	1,991	2,028
All other countries.....	34,269	28,343
<b>Total .....</b>	<b>276,400</b>	<b>283,300</b>



# CONSUMPTION OF CACAO PRODUCTS

Country	Consumption in Metric Tons	
	1914	1915
United States .....	74,379	84,181
England .....	29,030	47,267
Germany .....	49,707	43,600
Netherlands .....	32,095	40,995
France .....	28,140	31,000
Switzerland .....	10,078	11,311
Spain .....	6,912	6,512
Austria-Hungary .....	7,649	5,650
Italy .....	2,275	4,093
Belgium .....	6,164	3,800
All other countries.....	16,463	15,931
Total .....	262,900	294,300

These figures speak for themselves, but perhaps the most eloquent story of the phenomenal growth of the cacao industry in a single producing center is furnished in the following table:

## EXPORTS OF AFRICAN COCOA

Year	Amount
1891 .....	81 lbs.
1901 .....	2,231,040 lbs.
1911 .....	91,038,080 lbs.
1919 .....	400,926,000 lbs.

An increase from a mere 81 lbs. to nearly 401 million pounds of cacao in less than thirty years! We have told very briefly the romantic story of the history of the rise of the cacao industry to its present importance. In the next article we shall discuss in greater detail the varieties of cacao products, their physical and chemical properties and their commercial production.

## We Live on Profits

Whoa! Whoa! Shut off the gas and put your foot on the brake. Stop for a little reflection. The tendency of business men at this particular time, when orders are not plentiful, is towards reduction. Many accept business at prices without any regard to price. Can you afford to do this, no matter if these are prosperous times or otherwise, you must live, you must provide for your family. What do you purchase these living expenses with? Is it with your shop full of work? To a certain extent "Yes," but in reality not. If you have an abundance of orders and receive only enough or less than the cost of material, labor and the expense of conducting your business, you will have nothing left to buy food, clothing, etc., for your family.

**MORAL:** As you and your family must *live on the profits* of your business, do not buy, make nor sell anything, on which, in addition to your overhead expense, you do not make a reasonable profit.

GEO. HARMS.



*A* Chocolate Factory  
devoted to the  
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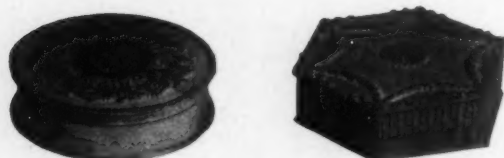
*Samples and Prices  
sent on request*

**FORTUNE PRODUCTS CO.**

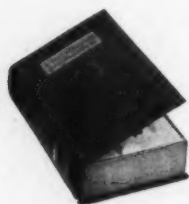
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*Effective Display*



*Individual Creations  
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CHICAGO'S OLDEST AND  
LARGEST MANUFACTURERS  
OF PAPER BOXES

519 to 531  
SUPERIOR ST.  
CHICAGO

## Proper Assembling of Boxes

(Continued from page 45)

nailing schedule is graded according to the thicknesses of the stock that is used in the box.

"All nails specified are cement-coated nails. If other than cement-coated nails are used 25 per cent more nails must be driven than specified. Plain nails, driven through and clinched, may be used for cleating. The size of the nail to be used should be governed by the species and thickness of the lumber in which the point of the nails are held. If the designated penny of nail is not available, use the next lower penny, and space nails proportionately closer. Nails should be driven flush—over-driving materially weakens the container."

Use cement-coated nails of size indicated when species of wood holding nails is .....	Thickness of ends or cleats to which sides are nailed.												Thickness of sides to which top and bottom are nailed.
	%	1/8	1/4	3/8	1/2	5/8	3/4	7/8	1	1 1/8	1 1/4	1 1/2	
Group I Woods .....	4d	5d	5d	6d	7d	8d	8d	9d	4d	5d	7d		
Group II Woods .....	4d	4d	5d	5d	6d	7d	7d	8d	4d	5d	6d		
Group III Woods .....	3d	4d	4d	5d	5d	6d	7d	7d	3d	4d	5d		
Group IV Woods .....	3d	3d	4d	4d	4d	5d	6d	7d	3d	4d	5d		

After having determined the size nails to be used in assembling your boxes the next thing to be considered is how these nails should be spaced.

The following chart, which is also based on laboratory tests, will be helpful in determining this factor of box assembling:

When Nails Are	Space When Driven Into	
	Side Grain of End	End Grain of End
6d or less .....	2"	1 3/4"
7d .....	2 1/4"	2"
8d .....	2 1/2"	2 1/4"
9d .....	2 3/4"	2 1/2"
10d .....	3"	2 3/4"

In order to ascertain the number of nails to be used, divide the width of the sides, top and bottom or length of the cleats by the spacing specified for the gauge of nails to be used. Fractions in the result greater than one-fourth if the points of the nails are to be held in the end grain and greater than one-half if the points of the nails are to be held in the side grain will be considered as a whole number. No board should have less than two nails at each nailing end. Where cleats of thickness not less than the thickness of the ends are used, approximately 50 per cent of the nails will be driven into the cleats. One of the serious faults in nailing boxes is overdriving. Nails should only be driven until the top of the head is just flush with the surface of the material. Overdriving crushes and injures the wood fibres and decreases the strength to an extent which depends on the amount of overdriving. On the other hand, if the heads of the nails are not driven flush with the surface, the joint between the boards is not so tight and rigid as it would be otherwise, and there is danger of the nail heads catching on objects and pulling.

These nailing charts and schedules determine the proper size nails to be used with certain thickness of wood and represent an extremely important factor in controlling shipping with all unnecessary damage eliminated. They represent laboratory tests made with actual boxes under all manner of conditions to which boxes are subjected in the course of ship-

ment. The record of the results of these tests is what has determined these schedules. With these facts in mind the readers will be able to grasp readily an understanding of the fact that both the nature of the wood being used and the sort and size of the nails used are vital factors and that there is a definite relationship between nails and wood that governs the use of one with the other.

A manufacturer of candy and allied confectionery products who selects and makes up his boxes in accordance with these schedules can be morally certain that he is doing everything possible not only to reduce his own losses in good-will and actual damage claims, but is also doing his part to reduce the tremendous economic loss that industry generally must suffer due to the use of improper shipping containers.

"Service" lately has become a much over-worked word, but it really expresses a vital meaning to anyone concerned with the sale and shipment of merchandise. It is perfectly obvious just how the manufacturer's service with regard to using proper shipping containers connects with the needs of his customers. They are interested in receiving shipments in cases that not only protect the goods themselves but their salability as well. Minor blemishes in package goods slow up the turnover and reduce the profits of the retailer. More serious damage both to bulk and package goods ties up the customer's investment and involves him in unprofitable damage claims. It is, therefore, important to satisfy the trade in these days of keen competition by making absolutely certain that every shipment be given ample protection against the hazards of shipping by being properly constructed and assembled.

Distributing warehouses have proven that a properly constructed wooden box costs less to unload, less to stack and less to load into cars for reshipment and less to handle by truck.

Because of the strength of such a properly constructed box, its resistance to weaving (as a diagonal end strain is called) and puncturing, protects not only the goods but their attractiveness as well. If this attractiveness is not preserved, the manufacturer's whole effort to popularize his product with the dealers and with the consumer is nullified, forcing an infinitely greater effort on the part of the sales organization, to which fact any salesman can testify.

So it all resolves down to the points whereby a manufacturer, by observing proven facts regarding the assembling of his box shook and by requiring that his box maker design and prepare his boxes according to scientific specifications, can save himself loss of money, good-will, time and sales; can help reduce the tremendous economic waste and can allow his business to expand normally unhampered by unnecessary harmful factors.

## Twelve nails at a blow!



### THE MORGAN No. 12 NAILER

illustrated above will drive from 1 to 12  
nails at a stroke.

You can appreciate the saving this affords  
over hand nailing.

Machine nailing is more accurate and makes  
a better, stronger box. It is

### An Economy Worth Your Consideration

Write, giving sizes of boxes, and we shall gladly  
send full information. Write today.

**Morgan Machine Co.**  
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Proper Wrapping Protects Your Product  
Against Dirt, Moisture  
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## OUR MACHINES WILL WRAP IN

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Capacity up to 140 per minute

## CAREFUL WRAPPING IS THE BEST ECONOMY

Send us a sample of your product. We will return it,  
wrapped as by machine, and gladly furnish you with  
full information on the equipment needed  
for your work.

**American Machine & Foundry Co.**

5520 Second Avenue  
BROOKLYN, N. Y.

Attention Wrapping Machine Department

## Flavoring Materials

(Continued from page 31)

mon which mitigates against their employment in their original state, i. e., they are practically insoluble in water, syrups and the like.

The oldest and in the past most prevalent method of rendering them usable has been to dissolve the oil in ethyl alcohol of requisite strength.

When such an extract is added, let us say to a sugar syrup, the oil does not remain in solution, but is precipitated in the form of minute droplets which are scattered through the syrup provided the operation has been properly conducted. An even flavor throughout the batch and its development to a maximum will depend upon the degree of subdivision which occurs, and this precludes the use of highly concentrated alcoholic solutions for the reason that upon their dilution with the syrup an oily layer will be separated which effectually resists all attempts to bring about its uniform incorporation with the syrup.

In order to surmount the objections attendant upon the employment of alcohol, a number of flavoring extract houses have endeavored to render the essential oils "soluble" by emulsifying them.

### The Emulsion Type of Flavor

In the emulsion type of flavor, the confectioner and his brothers in the baking, ice cream, beverage and other allied industries have at their disposal an article which merits their most thoughtful consideration.

It is not to be denied that a justifiable prejudice exists in certain quarters against the employment of emulsion flavors for the reason that a great many of them have been "thrown together" without any real knowledge of the principles underlying emulsification or of the requirements of the manufacturers into whose products they were destined to enter. In addition to this well-founded skepticism, there is encountered by the more conscientious extract houses who have devoted actual study to the problem the less reasonable hesitancy on the part of some confectioners to bestow upon emulsion flavors the attention they deserve on account of their very novelty.

As a matter of actual fact, there is nothing new about emulsions per se. They are in evidence at every turn. They play a vital part in the nutrition of man, and many everyday articles of food are emulsions. Milk is an example of the "oil in water" type of emulsion; butter represents the "water in oil" aspect. All the various fats and oils which constitute a considerable portion of our daily diets are emulsified within the body by the biliary secretions before the process of digestion proper can take place.

The pharmacist has for years emulsified his oils in order to assist nature in their assimilation by the body, particularly in cases of impaired fat digestion.



### Dispersion of Flavor

Regardless of the specific purpose to which an emulsion is to be put, there is one object which underlies all problems in emulsion manufacture and that is the subdivision or dispersion, as it is termed, of the oil phase to the maximum extent possible.

The object in attaining a high degree of dispersion is twofold. Firstly, it tends toward stabilization of the emulsion and, secondly, and of greater importance to the user, it results in an enormous increase in the effective surface of the oil. Thus when a cube of unit surface is subdivided into 1,000 smaller cubes the total surface exposed is increased a thousand-fold. The practical significance of this fact becomes at once apparent when we recall that it is the expired air charged with the vapors of the aromatic substance exciting the organs of smell, which gives us the sensation which we term flavor. The greater the surface of the oil exposed to the sweep of this exhaled air, the more nearly will it approach saturation and the more intense will be stimulation of the olfactory cells or, if you please, the stronger will be the flavor.

The principle outlined above may perhaps be made clearer by an illustration such as the following:

Imagine yourself as standing at the apex of a triangular shaped orange grove, boarded in on both sides and with the wind blowing toward you. Conceive that somewhere within the grove there is growing one huge orange. The air entering your nostrils will consist in part of that which has swept over this monster orange, but it will be diluted with a far greater volume of air which is wholly unscented.

Consider now that this orange becomes in some manner subdivided into forty or fifty billion smaller oranges which are scattered uniformly throughout the grove. The air which you now breathe will be surcharged with the scent of orange and the resulting sensation of smell will be correspondingly more intense.

This illustration is not altogether fanciful, for the writer has seen and examined an emulsion one ounce of which actually contained as many diminutive oranges (in the form of globules of oil) as we have attributed to our rather prolific grove in the illustration.

Emulsion flavors, when properly prepared, can be subjected to considerable dilution without coalescence of the oil globules, for the reason that each globule exhibits certain properties—certain stresses and surface tension phenomena—which enable it to preserve its individuality. That this property is certainly not possessed by alcoholic extracts can be readily demonstrated by diluting them with water. An oily layer soon becomes visible on the surface, and no amount of shaking will accomplish its redistribution.

This fact is of prime importance in adding the flavor to the batch, whether it be candy,

## UNIFORMITY of VANILLIN

**"FLAKY**, white crystals, readily soluble in alcohol and soluble in glycerine.

An ash content of not more than 0.05% and a melting point of 81° and over."—this, briefly covers the specifications of VANILLIN-Monsanto.

These specifications may sound uninvolved, but the utmost manufacturing skill is necessary to have each succeeding batch of VANILLIN identical when it is produced on an extensive scale.

Only after years of earnest, scientific effort were we able to accomplish this uniformity in our finished product, which is so highly desirable to the users of this important flavor.

Each lot that is marketed by us must measure up to the exacting standards which we adopted years ago.

Freedom from off-color (yellow color) and a melting point one full degree above the requirements of the United States Pharmacopoeia assure full strength, highest purity and true flavor.

**Monsanto Chemical Works**  
St. Louis, U.S.A.

Also Manufacturers of  
**COUMARIN-Monsanto**  
(The Original American Coumarin)

Stocks of VANILLIN-Monsanto are carried at St. Louis, New York, Chicago, Minneapolis, San Francisco and Los Angeles. Thus VANILLIN-Monsanto at all times is easily available to the consuming trade.

**VANILLIN-Monsanto is Uniform!**



## Dickson All Steel Candy Coolers or Slabs

have been on the market since 1910. They are used by prominent candy manufacturers throughout the entire country. All coolers are furnished with 2-inch pipe legs.

The following sizes are available for shipment:

No.	Size	Shipping Weight
1	36 x 60	700 lbs.
2	36 x 96	1,100 lbs.
3	36 x 120	1,500 lbs.
4	48 x 72	1,100 lbs.
5	48 x 96	1,600 lbs.

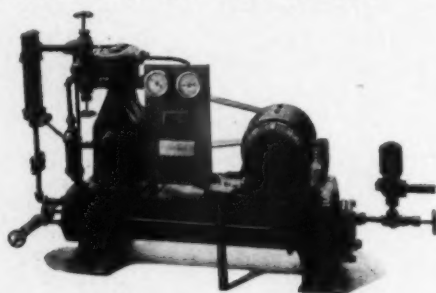
Write for prices.

All coolers manufactured under the Dickson patents are designed to insure proper water circulation resulting in RAPID, UNIFORM COOLING without the formation of vapor or steam pockets tending to produce hot spots.

The circulating water enters through a pipe connection centrally located in the bottom of the cooler, overflowing through an inlet dam, filling up the cooler with water and passing out through four outlet dams located one in each corner. These outlet dams are interconnected by a system of overflow pipes located within the cooler jacket. The circulating water is thus kept in intimate contact with the under surface of the top cooler plate.

## Refrigerating Machinery

The ISEBOY illustrated below is a modern refrigerating machine, completely self-contained, ready for immediate connection and operation, up to date in every respect.



It is designed to use either ammonia or methyl chloride.

Methyl chloride is a low pressure refrigerant entirely harmless and inoffensive, especially suitable for locations where ammonia might be considered undesirable.

If you are considering the installation of cold storage equipment or air cooling of chocolate dipping rooms, let me have your complete requirements and I will make you a quotation on the equipment that will surprise you.

### E. A. BURROWS

Refrigerating Engineer

Security Building

CHICAGO

syrup, dough or ice cream mix. The tendency exists to cause the oils to coalesce and to resist uniform incorporation with the other ingredients, and it is through the use of properly prepared emulsion type flavors that the much desired even blending of the flavor can best be accomplished.

### Judging the Quality of an Emulsion

The question naturally arises as to how to judge the quality of an emulsion.

This, it must be admitted, is not an easy matter. Chemical examination will in some cases reveal shortcomings, but not always.

Properly made emulsions should conform to the following requirements:

1. They should be prepared from only the best basic materials available and these materials should be tested for conformity to certain established standards before they are accepted in order to insure uniformity of the finished product.

2. No ingredient should be used which is subject to decomposition or whose presence is objectionable from a dietetic standpoint.

3. They should impart to the finished article of food a distinct flavor of agreeable delicacy and fidelity when used in proportions not much greater than 1 ounce to 100 pounds.

4. They should be permanent physically and chemically, i. e., when kept over a period of months under reasonable conditions of storage they should not separate or develop an "off flavor."

5. They should be of a consistency intermediate between that which makes for difficult handling on the one hand and too great a degree of fluidity on the other. An emulsion which is too fluid should be regarded with suspicion as being either weak or unstable or both.

### Air Conditioning

(Continued from page 40)

est price require the services of a man who is as experienced in this field as the candy manufacturer is in his. There are many makes of refrigerating and air-conditioning equipment on the market. Each one possibly has a field of his own. First price does not always necessarily mean low operating efficiency and long life and a comparison between high-grade equipment which pays in results and a cheap equipment which is bought on a price basis alone is not fair either to the manufacturer or to the candy manufacturer. Every dollar invested should represent value received.

Remember, too, that a guarantee of results is not always a protection. If a contract is given for a refrigeration system, the fact that it is guaranteed to do the work does not necessarily mean that it will do the work. A guarantee will not cool and condition a factory when the machinery will not. Rather look at experience and results accomplished by others than at the lowest first cost and wild guarantees.

## Imported Nut Situation

THE recent outstanding feature in the commercial world has been the enactment of the new tariff law. The importing shelled nut industry, with an added impost of eight cents per pound on shelled walnuts and ten cents per pound on shelled almonds coming at a time of year when the demand for shelled nuts was opening for the fall season, caused a good deal of difficulty and dissatisfaction in placing business for goods to arrive, inasmuch as the intervention of the tariff placed the seller and buyer in position where it was more or less of a gamble as to what would be the price on arrival of the goods. The tariff now being established, however, and the crop of almonds and walnuts being a plentiful one, and the further fact that this market has been rather reluctant to buy in round lots, has brought about the lowering prices to a point where some varieties of almonds are now being quoted at the prices prevailing under the old tariff. In other words, the added duty has already been absorbed by the shipper.

There is a large crop to be moved and shelled nuts should be plentiful, and we see no reason why the prices should be any higher than they were under the former tariff. Quite a lot

of filberts have been imported, as the filbert is a comparatively cheap nut. But, with the lowering of the prices of the rest of the market, so that the differential between the filberts and other shelled nuts will be the same as under the old duties, it would seem that the demand for both filberts and shelled walnuts and almonds will equalize itself in the same proportions as under the former duties.

### Walnuts

Some time ago, it was mentioned in this column that action had been taken by the Dried Fruit and Nut Association of New York and the Dried and Canned Food Association of Chicago to abolish the practice of shipping misbranded walnuts from France into this country. The matter was taken up with societies in France representing the interests of the responsible shippers of French walnuts. The result of the efforts of the associations here to bring about this reform in the shipping of goods from France has borne immediate fruit, inasmuch as the French exporting societies started a campaign from their end and elicited the attention of the government, who have just published a decree whereby they forbid any mixtures of foreign nuts branded as French walnuts. The French paper in New York, "Courier des Etats-Unis," will publish early

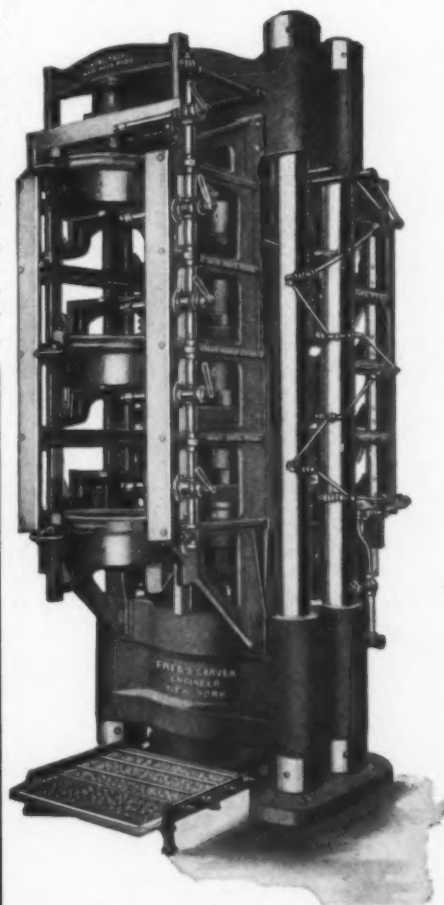
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## Haehnlen's Hardener

(A Pure Vegetable Product)

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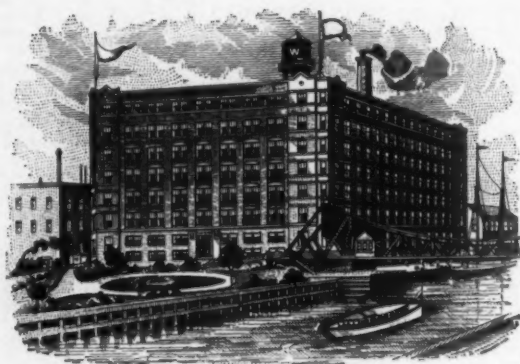
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295 Broadway  
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THE  
**WARFIELD CHOCOLATE CO.**

536-552 West 22nd Street  
CHICAGO



Specializing in  
**Quality Coatings**  
FOR ALL PURPOSES

AFFILIATED WITH  
**THOMSON & TAYLOR CO.**

in October a special number in book form giving publicity to complaints and suggestions of American business men with the view to the furtherance of better Franco-American relations with respect to exports.

In the meantime, the importers here have written to every shipper in France, re-declaring the standard for shelled walnuts as established by the Dried Fruit and Nut Association of New York. Proper protective measures will be invoked if the adherence to the standard contract of the association is disregarded. This should result in the stamping out of the promiscuous practice of some French exporters in bringing walnuts in from Turkey, Hungary and Roumania and packing them under the guise of French walnuts.

### Editorial About "Shadows"

Recently I ran across the following quotation: "An institution is nothing more than the lengthened shadow of one man."

There's a lot of truth in that when you come to think of it. You may apply it directly to your own business. As a matter of fact, that is how it should be applied. Your business—the lengthened shadow of you. How long a shadow does it cast? Is the shadow of others in the same town longer, and why?

And, in this connection, I happened to think of a line from Whittier: "In the sun they cast no shade." Whittier was speaking of the dead. True, they cast no shadows. True, also, there are some businesses that "cast no shadow" for they are dead businesses. Like the poor we will have them with us always.

What a shock it must prove to some men to review themselves and their businesses sometimes and find that they cast no shade, or to find that gradually the shadow of the business is becoming smaller because the man who is responsible for the business is becoming smaller!

There is another thought along this same line that many would profit by pondering. Often you find a business which has been developed by a man and who is now taking a son into the business. The boy comes in full of energy and new ideas. He has visions that, building upon what the father has founded, he can make the institution a larger, more profitable one. And often the father, content with what he has accomplished, refuses to let the son carry out his ideas with the result that he loses interest and soon there is another business which casts no shade in the sun.



## And when the box is opened—

What kind of an impression is made on the purchaser of *your* box of candy, when it is opened?

Is it pleasing to the eye, and does it express high quality and individuality?

Such a profitable impression can be obtained by the use of but three or four

### Conley Foil Bon Bon Cups

in each of your candy boxes. Our cups are furnished plain, colored, and stamped with your name. They brighten up the display of your candy and add to its salability.

*Write for samples and prices.*

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511 to 541 West 25th Street

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### The Upressit Cap



#### A Little Feature That Makes a Big Difference In Sales

**T**HE cap with the fascinating "snap". So fascinating that no child or grown up, either, can resist putting it back just to hear it "snap."

That snap means air-tight reseal every time the jar is opened, for the Upressit cap is fool-proof. You simply can't put it on part way, as you can a screw cap.

That "snap" means your candy kept in good condition until the last piece is eaten.

Mothers look for the Upressit Cap, not only because it keeps the candy good, but because the candy jar with the air-tight reseal it always a useful article to have.

For instance, there's the 8-oz. Upressit jelly tumbler, a big seller everywhere, because it represents two purchases in one; candy for the kiddies and the most prized of all jelly tumblers for mother.

If you haven't yet heard the Upressit "SNAP" send for a sample container today.

**Upressit Products Corporation**  
Long Island City, N. Y.

### VANOLEUM

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The ORIGINATORS  
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CONCENTRATED VANILLA FLAVOR

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THE SAME AS ALWAYS

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and Caterers.

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Its silent appeal  
is brilliancy  
and cheerfulness

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your fuel and labor costs.

Let us tell you—how to make  
better goods.

Let us tell you—how to get  
more output without increas-  
ing your shop force.

Your name on a postal will  
bring you the story—It's all in  
our booklet:

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We have developed the largest and most complete line of cane sugars in the world. Every grade and variety has been designed to fill a specific need.

When you choose your sugar from this line, you get the full benefit of the years of experience and study which have gone into its development. You get a grade or variety of sugar which the test of time has proved the most economical in production and the most satisfactory in quality for your product.

---

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*The Most Complete Line of Sugar in the World*



Our "WHITE BIRD" Design  
New Candy Box  
Decorated in SEVEN Beautiful Colors.  
Two Sizes: No. 1—1 lb. to 1½ lbs. No. 2—2 lbs. to 3 lbs.



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Prices Attractive, too  
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CAN COMPANY**  
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## •Xc GRAPEFRUIT (POMELO)

**A Quality Flavor-Concentrate**

Constructed from choicest raw materials, it imparts to your Confections the delightful Flavor of a fresh, sun-ripened Grapefruit.

*The growing popularity of this Flavor makes it worth your while to request the sample, which is free to rated firms.*

Just drop us a line—today.

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Expert Flavor Specialists  
JACKSON, MICH.



## To Succeed Eliminate Competition

You can do this by making better candy than anybody else. If you are to make better candy, nothing is so important as the *right sugar*.

There are many different kinds of sugar; we have spent many years experimenting with them all.

We know exactly what to use for each kind of candy, and the information is yours for the asking.

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Install one of these profit-makers and appreciate the REAL VALUE of a Read in your shop.

Write for Catalog

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**Mixing Machinery of All Kinds**

"Buy a READ"



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*Proper Control  
of Temperatures*

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Positive control of temperatures and humidity at all times and an economy of operation that is surprising are but a few of the reasons why a Baker would be valuable to your plant.

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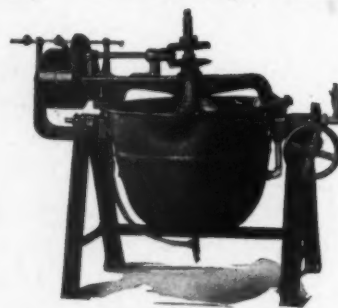
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**Safety—Durability—Economy**



Steam Jacketed Tilting Kettle

*Our Prices will interest you. Get them!*

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Also Manufacturers of  
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and **BUCYRUS REVOLVING PANS**—  
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ADD THE ATTRACTIVE TOUCH OF  
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*White Stokes*

**MALLO COVERING**

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Golden Cream - Rose Pink  
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Used like chocolate—eats like chocolate—keeps like chocolate.

Packed ten—10-lb. cakes in case.

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Sole licensees under patents granted August 7, 1917, No. 1,236,380, and March 15, 1921, No. 1,311,450.

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OUT READILY

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for 67 years

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Genuine True Fruit Flavors  
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**"First producers of Certified Colors"**

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Walter Baker & Co.'s  
**Liquor Chocolates  
and Coatings**

Are the Standards of the Trade for Confectioners' Use



*Sweetened and unsweetened; light, medium and dark, whatever the difference of color or flavor, all are absolutely pure, smooth and uniform to work.*

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*57 Highest Awards at the Expositions of Europe and America*



**Chocolate Coatings  
and Liquors**

Recognized as the  
**STANDARD  
of QUALITY**  
by the  
Leading Confectioners

*Samples and Quotations Upon Request*

**The Stollwerck Chocolate Co.**  
NEW YORK CHICAGO LOS ANGELES

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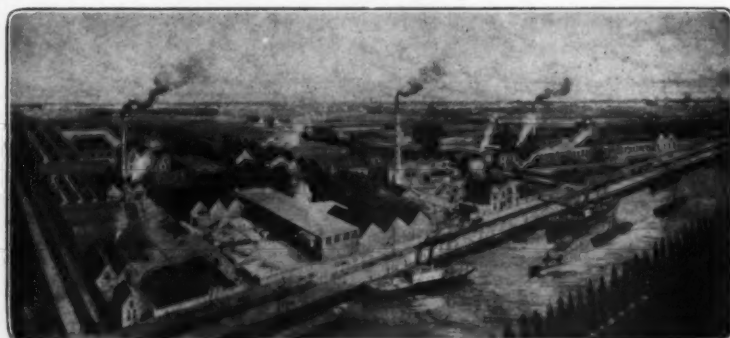
Not the Cheapest — Not the Dearest — BUT THE BEST!

Purity, Strength and Uniformity Guaranteed

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FRUITS  
MILK  
POWDER  
MAPLE  
SUGAR



Plant in Belgium where PURE FOOD GELATINE is manufactured

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CHERRIES  
GUM  
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GELATINE

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Cacao Products, Sugars, Milk, Fruits and Raw Materials

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**FOR HARD CANDY**

*Write for sample and further information*

**Full Line of FLAVORS and COLORS**

**W. J. BUSH & CO., INC.**

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*Most reliable gelatine  
for Confectioners—*

## **WHITTEN'S GELATINES**

are standard

— Established 1879 —

Strength, purity and uniformity guaranteed

Manufactured by

**J. O. WHITTEN CO.**  
Winchester, Mass.

Woolworth Building  
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20 East Jackson Blvd.  
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## **Highest Grade Shelled Nuts**

1885—IMPORTERS—1922

**SPENCER IMPORTING CO.**

25 Leonard Street, New York City



# Standardization

**T**HE making of a food-product should not be conducted in a careless, haphazard way.

It is a delicate process. Standards must be established and carefully maintained; not only Government standards, but also personal standards which contribute so largely to perfect results.

Such has been our principle for many years in making gelatines.

Result: Purity, quality, uniformity in product and consequent success.

*Send for specimens and satisfy yourself.*

**MILLIGAN & HIGGINS GELATINE CO.**

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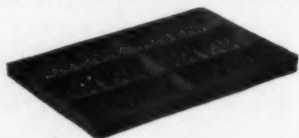
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*Specialists in the Chemistry of Chocolate and Cocoa Products  
and in the Problems of the Confectionery Industry*

Examination of Food Products, Gelatins,  
Flavors, Coloring Matter and Extracts.

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BARS, CAKES, FANCY PIECES  
Double Molds for Hollow Figures  
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Help Wanted, Situations Wanted, Salesmen Wanted, Machinery and Equipment Wanted and For Sale, Etc., Etc.

*Remember—this is the manufacturers' own magazine devoted to the interests of the executive, the purchasing and production departments of a candy and chocolate factory. Therefore this is the most logical medium through which to make known your wants regarding the sale or purchase of machinery and equipment, help wanted, or positions wanted, etc. Closing date for this department, first of month.*

#### MACHINERY FOR SALE

FOR SALE—ONE KISS MACHINE, Model "K," in perfect condition. Package Confectionery Company, P. O. Box 2252, Boston, 3, Mass.

FOR SALE—BUTCHER BOY Refrigerator, 22 x 11 feet; like new; excellent for hardening room. Phone Dearborn 1453. Standard Candy Co., 411 N. Wells St., Chicago, Ill.

FOR SALE—1 IDEAL CARAMEL Wrapping Machine, Model F,  $\frac{3}{4}$  x  $\frac{3}{4}$  x  $\frac{3}{4}$  to  $\frac{3}{4}$ ; 1 Model K Kiss Wrapping Machine (Package Machinery Company); 1 Lozenge Machine (Valley City Machine Company); 1 Lozenge Machine (Lowe & Duff); 1 Imperial Day Mixer, capacity 1½ barrels; 1 Day Mixer, capacity 1½ barrels; 1 National Equipment Company Packing Table, D. C. Motor; 6 Candy Slabs, Rock, Gas Pipe Stands; 3 Copper Kettles with Handles; 4 Copper Steam Jacketed Kettles from 20 to 25 gallon capacity; 1 Holmberg Kettle, inside coils, bottom draw-off, 100 gallons; 6 Crystal Tanks with Reynolds Trucks; 1 Stick Candy Sealing Machine (Old Colony Machine Co.); 1 Coconut Ball Machine (J. L. Causey); 1 Saxmayer Tyer; 1 250 H. P. Heine Tube Boiler. National Biscuit Co., 202 Main St., St. Joseph, Mo.

FOR SALE—BAUSMAN DISC; 3-ROLL Stone Finisher; 1,000 lb. Dough Mixer; 500 lb. Dough Mixer; 72 in. Melanger; Two-Way Caramel Cutter; Racine Basket Dipping Machine. All in good working order. Lovell & Covell Co., 128 Fulton St., Boston, Mass.

FOR SALE—USED ENROBER, complete with bottoming device; rebuilt. Liberty Chocolate Machine Co., Cincinnati, Ohio.

FOR SALE—TWO PRACTICALLY new, direct connected, Racine Barrel Beaters; best offer takes them. Hoefler's Centennial Choc's, Inc., Buffalo, N. Y.

#### MACHINERY FOR SALE—Cont.

FOR SALE—WE OFFER FOR SALE a second-hand, 15-inch belt Chocolate Enrober, made by the National Equipment Company; Enrober is in first-class condition. Address Loose-Wiles Biscuit Company, Minneapolis, Minn., for price.

#### MACHINERY WANTED

WANTED—A 200 LB. SAVAGE Marshmallow Beater in good working condition. State lowest cash price, location and condition. Address J257, c/o The Candy Manufacturer.

#### FOR SALE—MISCELLANEOUS

FOR SALE—GLASSINE PAPER, A1 stock, 20-25 lb. weight; two sizes, 6¼ x 7¼ and 6¼ x 12; approximately 1 ton of each size. Make offer. Franklin Baker Co., 16 Church St., New York City.

FOR SALE—COMPLETE CANDY factory and equipment; 10,000 ft. floor space; 15 people; cheap rent; wonderful opportunity to get in RIGHT in the West's last great undeveloped region—the Coos Bay country of Oregon; center of immense lumber, coal and dairying industries; Congress just authorized building of two jetties to cost over three million; business fine in all lines. Three good men, executive, producer and seller, could make a barrel of money. Look us up in Dun or Bradstreet. If interested, write immediately to G. A. Martin, President, Martin Candy Company, Marshfield, Oregon.

#### BROKERS WANTED

GET READY FOR A FINE FALL business with our peanut specialty candies. Good opportunity for few live brokers. Hesse Brothers, Detroit, Mich.

#### LINES WANTED

REPUTABLE LINES WANTED FOR Louisiana, Mississippi, Alabama, Texas. Consolidated Brokerage Co., New Orleans, La.

#### FOREMAN WANTED

A BOSTON CONCERN MANUFACTURING confectionery requires the services of a high grade foreman on cream center and M. M. work; ability to develop new ideas and supervise production of quality goods, together with a knowledge of handling men and experience in up to date methods are absolutely necessary to qualify for this position. Best of references required. Address J256, c/o The Candy Manufacturer.

#### SALESMEN WANTED

SPECIALTY SALESMEN WANTED for each eastern and southern state to sell our specialties to the jobbing trade, new specials each month that sell fast. Commission only. Do not answer unless you have reference and can produce. The Can D Ola Company, 611-613 Callowhill St., Philadelphia, Pa.

SALES MANAGER WANTED HAVING experience in the distribution of chocolate specialties, coatings, etc., to take complete charge of distribution. Investment of not less than \$15,000 required for co-operative reasons, fully secured. This is an opportunity worth investigating. The Can-D-Ola Company, 611-613 Callowhill St., Philadelphia, Pa.

WANTED—A TRAVELING SALESMAN by an old established progressive house catering to the manufacturing confectioners and cracker bakers; headquarters New York City. Address J258, c/o The Candy Manufacturer.

#### A BUYING OR SALES EXECUTIVE AVAILABLE

A MAN WHO HAS HAD A WIDE EXPERIENCE in the buying and selling of food products wishes to form a connection with a first class candy manufacturer. He has, for the past five years, had absolute charge of the purchasing of raw materials for one of the largest confectioners in the world and is able to satisfy anyone as to his ability and integrity. Address J259, c/o The Candy Manufacturer.

## "Saving Profits in Factory Production"

will be the keynote of the Second Annual Superintendent's Number, issue of January, 1923. Send in your letter or article on some phase of candy factory management or operation for the Superintendent's Round Table, to reach us by December 15th.—Editor.

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## Superintendents!

This is the time to at least outline your article for the

### Superintendent's Roundtable

which will be a feature of the

Second Annual

### Superintendent's Number

Issue of January, 1923

An edition devoted almost exclusively to problems of production—machine efficiency, plant layouts, handling raw materials, help, etc.



2





## Good Packing Protects Goodwill

**T**HE CONDITION of your goods when they reach the retailer and are placed for final sale to the consumer largely determines the goodwill that they will create for you.

Your product has been built by careful attention to details that affect its quality and its appeal to the taste of the consumer. Your business is based on this care and attention.

Your goodwill must be protected in shipping equally as much as in manufacture. Good Wood Boxes are the best shipping containers yet devised. They carry your product safely through the grueling trip in a carelessly loaded car. Your product is delivered to the retailer and finally to the consumer in perfect condition. The chain of your goodwill is unbroken because you give your product maximum protection by shipping in

# Good Wood Boxes

*Backed by the National Association of Box Manufacturers*

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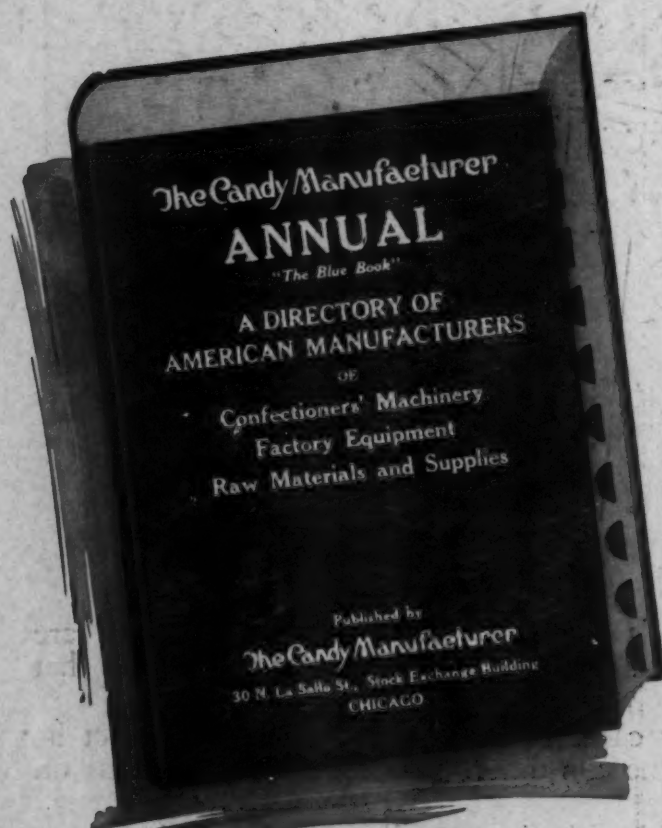
1553 CONWAY BUILDING, CHICAGO

Eastern:  
433 CALVERT BUILDING  
Baltimore, Md.



# Where to Buy Confectioners' Supplies and Equipment

While this book is being compiled we would be glad to receive inquiries from our subscribers regarding sources of supply or any problem in purchasing. All information in our Buyer's Directory files is at your disposal.



## CONTENTS:

*In addition to the Directory feature The Blue Book will contain:*

An index of all associations, national, territorial, state and local within the confectionery industry, and the national associations in the allied industries.

Rulings, regulations and legislative situation affecting confectionery supplies and products. Statistical information on the industry. Reports and surveys of special value to the purchasing and sales departments.

A review of books, periodicals and technical literature on candy factory management, methods and materials and the industry in general.

A directory of trade names.

The data for this candy manufacturers' buying guide is being compiled and the book will be issued later in the year. In the meantime our subscribers have access to all information in our directory files. We will be glad to receive your inquiries regarding sources of supply.

## The Directory Section

of the Blue Book will contain the following classifications:

Directory of manufacturers of chocolate and candy machinery, refrigerating machinery, factory equipment, tools and utensils.

Directory of manufacturers and importers of confectioner's colors, flavors, essential oils, gums, extracts and essences, gelatines, starch, corn syrup, molasses, honey, milk products and all raw materials.

Directory of manufacturers of chocolate coatings, liquors, and cocoa butter; cocoanut oils, butters and cocoa butter substitutes.

Directory of brokers and importers in cocoa beans, cocoanut, fruits, nuts, etc.

Directory of sugar brokers and refiners.

Directory of peanut brokers and growers and manufacturers of peanut machinery.

Directory of manufacturers of paper boxes, fancy, set-up and folding; candy containers—tin, glass, redwood, baskets, leather, etc.

Directory of manufacturers of paper box liners, laces, bonbon cups, seals, trimmings, etc., box papers and box tops.

Directory of manufacturers of box wraps, bar wraps, foils, waxed papers, dipping papers, bags and paper specialties.

Directory of manufacturers of shipping containers: corrugated, solid fibre and wood boxes, and pails.

Directory of lithographers and manufacturers of "Dealer Helps" and advertising specialties, window trims, store signs, display cards, hangers, premiums, souvenirs, etc., etc.

## The Candy Manufacturer Publishing Co.

30 N. La Salle St., Stock Exchange Bldg.  
CHICAGO

